

'It's Important to Know In Time'

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The Newspaper of the Industry**Air Conditioning & REFRIGERATION**
Production Tools for Victory

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**'Written To Be Read on Arrival'**

Issued Every Monday at Detroit, Michigan

JAN. 17, 1944Vol. 41, No. 3, Serial No. 774
Established 1926.**Inside Dope**

By George F. Taubeneck

BooksPaper, Letters, Visits
Gen. Marshall and the
Unions' Worst Blunder
Red Tape in England
A Satire in Rhyme**Books**

Our press broke down a couple of weeks ago, and it is taking what seems an eon to get the parts to fix it. In the meantime, we have had to scramble around to find an outside printer—which accounts for the recent delay in arrival of the NEWS.

One reason, we believe, for Old Betsy's (the press) refusing to go on with it all is that we have been working her night and day the last two or three months to catch up with book orders. Books in the Refrigeration Library have been selling at an unusually rapid pace for some time. And then, last fall, the Army and Navy came along and practically cleaned us out.

But, we are happy to say, Old Betsy had almost caught up with the reprinting schedule when she fractured a few vertebrae.

As soon as she is all fixed up again, we plan to issue an excellent new book on electric motors, and the long-awaited "Who's Who in Refrigeration and Air Conditioning."

In the meantime we might suggest, as modestly as possible under the circumstances, that only a few hundred copies remain of "Their Heads Shall Rise Again"—picture-loaded book on the Occupied Countries, the World We Fight For, which came from the hand and camera of the writer of this column. They are going pretty fast at five bucks a throw.

Paper, Letters, Visits

While we are in this unaccustomed apologetic mood, we might as well take care of a few other "regrets."

First, to the Joint Engineering Societies of Milwaukee, the Joint Engineering Societies of St. Louis, and the Detroit section of the A.S.R.E. for being unable to appear on their recent programs, as scheduled. This was a source of exceeding personal regret.

Next, to the scads of subscribers whose letters have not yet been answered—to these friends we plead: please be patient. We'll get to you soon.

With so many of our staff in uniform, we have reached a sort of perpetual-motion routine here; and if anything disturbs that routine—such as a busted press, a couple of "flu" attacks, or a disgruntled employee—we get so far behind that it takes us weeks to catch up.

Not long ago a California subscriber wrote in with a complicated problem he wanted us to help solve. We didn't have the answer right away for him; and a week later he wrote us a sizzling letter, complaining about our neglect.

So, we wrote him an outline story of our "help" situation, of how we have kept a draft-riddled organization patched together only with the aid of part-time workers, and of the extreme lengths to which we have gone in recruiting various types of labor.

Shortly this reply came back: "After reading your letter we have decided to close up shop and all go to Detroit to help you out. What you're doing for the industry is more important than what we're doing, and we've decided that our best contribution would be to go up there and help!"

(Concluded on Page 2, Column 3)

U.S. Okays Full Pay to Salesmen At 1943 Rates

WASHINGTON, D. C.—All commission salesmen may be paid their 1944 commissions on the basis of the legally established 1943 commission rate, regardless of amount, without getting approval from either the War Labor Board or the Treasury.

This came about when the Director of Economic Stabilization, Judge Fred M. Vinson, sent a letter to the Commissioner of Internal Revenue authorizing and directing him to apply the same stabilization rule to commission earnings and certain related methods of compensation as is now applied by the National War Labor Board.

This authorization follows a recommendation by the Commissioner that this action should be taken if the National War Labor Board's commission rule is continued. Under the National War Labor Board's rule, applicable to commission salesmen earning less than \$5,000 per annum, no approval for any increase or decrease in total annual commission earnings is required so long as the commission rate on the individual transaction is not increased or decreased.

Any change in commission rate and any change from salary to commission basis requires the approval of the Commissioner of Internal Revenue or the National War Labor Board, depending on which agency has jurisdiction.

The restrictions under the stabilization (Concluded on Page 24, Column 1)

WFA Storage Order Forces Meat Packers To Dump Million Lbs.

PHILADELPHIA — One million pounds of meat products were taken from cold storage rooms in 18 meat-packing plants here recently and dumped into vats for fertilizer and fats to comply with the recent War Food Administration order intended to free cold storage space for highly perishable foods.

The meat had to be dumped to prevent spoilage, meat packers said, but Peter J. Carroll, area supervisor for the WFA, claims that the meat in question did not require cold storage.

Under the WFA order, cured meats, tallow, bones, and horse meat were barred from cold storage entirely, while hearts, pork hocks, pigs' feet, kidneys, and similar products were limited to 10 days' storage.

Calling the WFA ruling "ill-advised," George A. Casey, president of one of this city's largest meat processing plants and chairman of the board of the National Independent Packers Association, complained that his firm was destroying the food usefulness of 200,000 pounds of meat products. Recent heavy slaughtering of hogs had caused an accumulation of pork products which could not be preserved without freezing, he added.

Pittsburgh Packers Move Pork Into Fur Vaults

PITTSBURGH — Surplus pork is being stored here in the "fur" storage department at Kaufmann's Department Store and North Pole Cold Storage & Ice Co.

Thousands of furs stored by the department store were moved to make room for the pork. North Pole offered its facilities.

Restrictions Off On Copper Use In Installations

WASHINGTON, D. C.—Copper or copper base alloy pipe or tubing may now be used in all commercial refrigeration or air conditioning systems, except for "service connections" which connect a system to a water or drain pipe, without restriction as to length or size of tubing, according to the amended Schedule VI to Limitation Order L-126 (Industrial and Commercial Refrigeration and Air Conditioning Machinery and Equipment) issued by WPB Jan. 11.

The revised schedule does permit the use of copper tubing for "service connections" in systems on board ship or at advanced bases of the Army and Navy, and in systems for the Army, Navy, Maritime Commission, and War Shipping Administration which had been planned and accepted by April 6, 1943.

Previously, Schedule VI had prohibited the use of copper tubing for all refrigerant connections, for tubing three-quarter inch O.D. or smaller used in self-contained systems, systems for the above-mentioned government services, or in applications

(Concluded on Page 4, Column 5)

G-E Branch Handles Appliances in N.Y.

NEW YORK CITY—General Electric Co.'s factory branch here took over on Jan. 1 the distribution and sale of all major appliances in this territory, according to an announcement by H. L. Andrews, vice president.

The official announcement was as follows:

"Effective Jan. 1, 1944, the Metropolitan Distributing Branch of the Appliance and Merchandise Department of the General Electric Co. will be responsible for the distribution and sale of General Electric refrigerators, ranges, home laundry equipment, water heaters, dish washers, disposals, and kitchen cabinets. The branch will serve the New York metropolitan area, exclusive of New Jersey.

"The branch headquarters will be located in the General Electric Bldg., 570 Lexington Ave., and will be under the direction of Earle Poorman."

There was no indication of the future activities of Rex Cole, Inc., independent distributorship which had handled the G-E appliance line.

Dayton Rubber Advances Davis and Slingman

DAYTON — The Dayton Rubber Co. has appointed T. C. Davis, formerly manager of industrial sales, as vice-president in charge of mechanical sales planning and experimental sales. T. D. Slingman, New York district manager, has been made vice-president in charge of mechanical sales.

In the manufacturing and development divisions of the company, H. S. Mooradian, superintendent, has been appointed vice-president in charge of production and Joseph Rockoff, chief chemist, has been made vice-president in charge of development.

These offices have been created by Dayton Rubber to serve expanding markets and new product development and increased manufacturing facilities at Dayton, Ohio and Waynesville, N. C. The company is also interested in the operation of the Copolymer Corp., a synthetic rubber production plant at Baton Rouge, La.

Repairman Training Plan Ready For Local Activity**'Freon-22' Refrigerant Now Being Produced On Commercial Scale**

WILMINGTON, Del.—Kinetic Chemicals, Inc., last week announced that it is now in commercial production of monochlorodifluoromethane, known as "Freon-22," and that this refrigerant is now generally available to the refrigeration industry.

"This 'low temperature' refrigerant is now available to manufacturers and through the distributing organization of Kinetic Chemicals, Inc., to those consumers who have already installed machinery in which it is the refrigerant, and to those who, having sound engineering advice, desire to convert their 'low pressure' apparatus to its use," declares the announcement from the producer. "Freon-22" is not at this time under allocation by the War Production Board.

"Freon-22" formerly had been synthesized in a semi-works scale plant, but now a small commercial plant has been set up and the price reduced to less than half the 1943 figure, the producer has announced.

"The pricing at present is an intermediate step in the determination of final price based on cost," Kinetic says. "It cannot be predicted at this time that 'Freon-22' can ever be sold at the price level of 'Freon-12'."

Motor and Oil Burner Repairmen 'Critical'

WASHINGTON, D. C.—The jobs of all-round repairman of electric-motor equipment and all-round repairman and installation man of oil burner equipment have been added to the list of critical occupations, the War Manpower Commission announced Jan. 5.

All occupations on the critical list, it was explained, are among the essential occupations listed by the commission. For inclusion on the list of critical occupations (a) the shortage of the skill must be so acute "as to impede or threaten to impede war production;" (b) the occupation must be one requiring lengthy training and considerable experience; (c) the occupation must be of such a type that replacements cannot readily be made by upgrading; and (d) it must be an occupation for which there is a definite need in industries in which current production schedules must be maintained or expanded for the successful prosecution of the war.

Workers possessing skills in critical occupations are subject to particular consideration in connection with Selective Service classification and in connection with selective placement activities of local United States Employment Service offices.

Knapp Works Manager At Universal Cooler

MARION, Ohio—A. E. Knapp, associated with the Nash-Kelvinator Corp. for the past 18 years, has been appointed works manager of Universal Cooler Corp., according to F. S. McNeal, Universal Cooler president.

Mr. Knapp's experience embraces practically the entire history of the "low pressure" refrigeration field, and he holds the distinction of having a hand in the production and installation of some of the earliest units of this type. He is a member of the American Society of Refrigerating Engineers.

WMC, U.S. Education Dept. To Aid Program For Instructing Repairmen

CLEVELAND — Temporary local coordinators for the National Refrigeration Manpower and Training Program which will train refrigeration repairmen, will receive within a few days the official program statement or guide which will permit them to proceed immediately with local plans for putting the program into effect.

This was announced by W. Ray Kromer, Training Director for the Refrigeration Industry and Consultant to the Bureau of Training, War Manpower Commission.

The War Manpower Commission, declares Mr. Kromer, has already instructed its field organization on its part of the program. The U. S. Department of Education and the Department of Training, WMC, has sent out complete instructions and the course of study to all field offices.

At the present time 81 temporary coordinators have been set up to organize Local Refrigeration Councils within their communities. However, there are many areas in which local activity is still needed, and those in the industry who are interested should contact Mr. Kromer whose headquarters are at 1835 E. 24th St., Cleveland 14, Ohio.

The temporary coordinators are for the most part representatives of electric power companies, since the Council of Electric Operating Companies has given its support to the training program. The job of these men is to help organize the Local

Part of the suggested organization plan for a Local Refrigeration Council is published on pages 6 through 9 of this issue. It will be of interest to those who wish to get a training program going in their own community.

Council, whose function it is to administer the training program locally. The Permanent Coordinator in each community may be either a man active in the industry or the power company representative.

The Administrative Headquarters has suggested the following procedure for the temporary coordinator at the organizational meeting: (1) complete the organization; (2) select the officers; (3) select the permanent coordinator; (4) appoint committees as outlined in the Program Statement; (5) obtain approximate number of trainees needed by local contractors; (6) gives instructions to the Training Committee for immediate action.

The following is the recommended continuity of training committee action (Concluded on Page 4, Column 3)

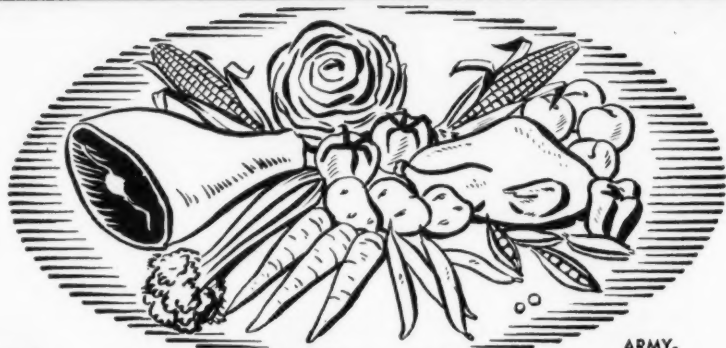
McNeely Will Direct Ansul Advertising

MARINETTE, Wis.—H. V. Higley, president of Ansul Chemical Co., announces the appointment of R. C. "Bob" McNeely to direct its advertising.

Mr. McNeely has a background in the advertising field extending over a period of 22 years. His last connection was with Signal Electric Mfg. Co., Menominee, Mich., as sales and advertising manager, which post he held for 12 years. Prior to that he was assistant advertising manager for the Lloyd Mfg. Co. of the same city.

Mr. McNeely will handle the advertising duties for both Ansul and its subsidiary, duGas Engineering Corp.

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BEN-HUR

... FARM LOCKER PLANT ...

BEN-HUR MFG. CO. • 634 E. Keefe Ave. • Milwaukee 12, Wis. • Established 1911

Today BUY MORE WAR BONDS

Inside Dope

By George F. Taubeneck

(Concluded from Page 1, Column 1) Gen. Marshall Is Sore

When Gen. Marshall told reporters in an "off-the-record" session that strike threats by the nation's railroads were "the worst crime ever committed against America" and would cost the nation "hundreds of thousands of lives of American boys" he was wrought up, to be sure.

But he had plenty to be wrought up about.

Recently this column hinted at the collapse in negotiations with "responsible German elements" for surrender at Teheran. Nothing was said, however, about the continuing diplomatic negotiations with Germany's satellites: Finland, Bulgaria, Rumania, plus on-the-fence Turkey.

Had the United Nations been able to continue those negotiations to their intended climax, it would have been practically unnecessary to dash the heads of half a million of our finest lads against the truly formidable defenses-in-depth Fritz Todt has built for Hitler along the Channel coast.

Could we have made quick, protected landings into Rumania and Bulgaria, backed up by Turkey's million-man Army on-the-march, it might have been necessary for Hitler to throw from a million to a million-and-a-half men down there against

us. That's about all he has with which to meet us, from whatever direction we come.

Apparently that was about to happen, until the railroad strike threat scared out the Balkan negotiators. They were taking a gamble they couldn't afford to lose, because Hitler has them by the throat now, and if we couldn't come quickly to loose that throttle-grip, they'd be wrecked. Hitler's brutality against turncoats provedly knows no bounds.

It's too bad that the railroad unions—which, along with the typographical unions, are among the most responsible, patriotic, and honest of the American labor combines—had to be the groups to be blamed for this calamity. Sheer chronology of wage-agreement expirations caught them in this dilemma.

If it does happen that our losses in the cross-Channel invasion are as frightful as the pessimist predict, and if the full story of the Balkan diplomatic negotiations comes out, it seems obvious to expect that the politically powerful veteran's organizations will set out to "break" the unions. They could set back the cause of American labor by two decades.

This will especially come true if the next three or four months turn up further large-scale strike threats. Will organized labor turn out to be as dumb as it now looks?

Red Tape in England

A correspondent complains to the London Times about government red tape.

Sept. 4, 1942 he received a letter from the War Agricultural Executive Committee, pointing out that certain of his farm buildings needed repairs. He replied that he had ordered the repairs four months since.

Sept. 25, the WAEC suggested an interview. This was held. Oct. 15 the WAEC asked for specifications of the lumber needed. They were given. The WAEC said they would be forwarded to the proper authority.

Oct. 27, the WAEC directed the owner to send his specifications to the Ministry of Works. That office promptly sent forms, to be filled in triplicate and forwarded to the Timber Control Area. Nov. 7, the Ministry of Works demanded further particulars on another form. These were furnished. Nov. 16, the Ministry instructed a direct appeal to the Timber Control. It was sent. Nov. 22, the Timber Control demanded an application in triplicate, with further details. It was sent. Nov. 26, the application was approved, and a license was granted for the repairs.

Dec. 1, an order was placed by the owner with the local builder, who then ordered the necessary timber.

PURO ELECTRIC WATER COOLERS

Different models available for the various requirements of government agencies and war production plants.

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Speedy and positive location of refrigerant leaks is very necessary in wartime.

FOR CONSERVATION OF IRREPLACEABLE SUPPLY... loss of present supply of certain gases spells the end of refrigeration . . . Freon, for example, is restricted to certain government uses and to certain critical operations in industry.

FOR SAFETY . . . toxic gases in some cases replace standard refrigerants . . . guard against toxicants.

FOR GREAT SAVINGS IN TIME AND LABOR . . . there's a shortage of manpower, so use it thriftily. Lenk Halide Leak Detector saves time. Lenk Halide Leak Detector features flame control, shut-off valve, self-cleaning orifice, non-clogging burner.

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Make the most of it...CALL IN SERVEL now!

Today's big job is war work. Tomorrow's will be providing maximum employment for our returned fighting men. On the day that peace comes, and reconversion starts, you must know *exactly* what you are going to do about post-war business. Before that day:

You must analyze the market for your product—Servel's district managers can give you valuable aid in this field.

You must set up distribution that is capable of selling your product to the user—Servel's cooperative merchandising program will help you find some of the customers you will need.

You must test the performance of new products

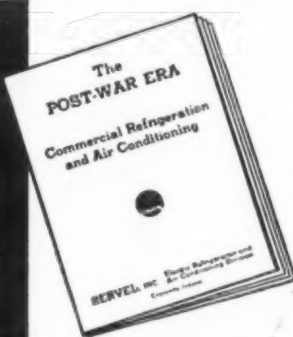
—Servel's engineers will lend their laboratory testing facilities and help you with advice.

You must choose condensing units that will meet postwar standards of performance and reliability—Servel field engineers can now give you information on postwar models to meet your needs from 1-5 horsepower to 50 horsepower.

Today—Servel is producing a full line of condensing units for its distributors and manufacturing customers, in regular temperature ranges and also in two- and three-stage models for temperatures down to minus 110° F. All are available at prevailing priority levels for all applications approved for wartime use.

Send today for FREE BOOKLET

What does the peace hold for commercial refrigeration and air conditioning? Read "THE POST-WAR ERA," a new interesting booklet for every manufacturer who plans to manufacture fixtures, appliances or other devices requiring cooling—after the war. Don't put it off. Write for your copy today.



SERVEL, Inc.

ELECTRIC REFRIGERATION AND
AIR CONDITIONING DIVISION
Evansville 20, Ind.

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LESS REPAIR

NATIONAL APPLIANCE CONSERVATION PROGRAM

1944 CONSERVICE PROGRAM

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- ✓ New "Better Care-Less Repair" School for Homemakers
- ✓ Revised "Care and Use" Book
- ✓ Newspaper Mat Service



It checks on every count in meeting the objectives of the National Appliance Conservation Activity

Again—it's CONSERVICE for '44. New, Improved, Better! And more necessary than ever now that appliances are a year older! Here's how it adds up—

1st. It Sells Conservation. Appliances are vital. All of us—consumers, retailers, manufacturers—must help keep them running. This Conservice Program shows—and tells—how!

2nd. It Helps You "Maintain" QUALITY Repair Service. Provides training for new service people, through our new, streamlined Conservice Training Schools.

It's a Program for NOW! Tied right into the nationwide "Better Care—Less Repair" Activity. It's been concentrated to help your country—your customers—YOU!

52-Page Wartime CARE AND USE BOOK. Millions of homemakers are already using it... millions more need it, will thank you for it. It's the biggest good-will builder you ever bought for a penny.

NEWSPAPER MAT SERVICE. To tell how to take better care of appliances... why you can't give instant repair service... offer the "Care and Use" Book. Your advertisements, for your store. Mats available free.

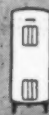
A New CONSERVICE SCHOOL FOR HOMEMAKERS. An actual "school" to teach homemakers how to change fuses, make simple repairs on cords, plugs, etc. A natural for retailers with facilities for group meetings.

NEW CONSERVICE TRAINING SCHOOL. To train new service people how to repair appliances. Last year's schools improved... streamlined to fit in with your war-busy service schedule. Be sure your new people attend.

See your Westinghouse Electric Appliance Distributor. Order "Care and Use" Books and newspaper mats through him. Check him for details on the Homemakers' Conservice School. Ask the dates of the Dealer Training Meetings.

Westinghouse Electric Home Appliances

PLANTS IN 25 CITIES... OFFICES EVERYWHERE



WOLVERINE REFRIGERATION TUBE



WOLVERINE TUBE DIVISION
OF CALUMET AND HECLA
CONSOLIDATED COPPER COMPANY
1413 Central Ave. • Detroit, Michigan

R. Sayre Named Manager Of Graybar In Memphis

MEMPHIS, Tenn.—R. B. Sayre has been appointed manager of the Memphis office of Graybar Electric Co., Inc. He was formerly manager of the outside construction department for the firm's branch office in Atlanta.

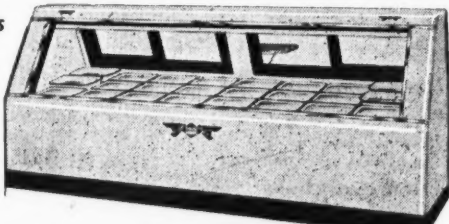
A native of Memphis, Sayre has been with Graybar since he started as a warehouse clerk here 22 years ago.

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A Limited Number of Some Types

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For Immediate Shipment

Reliable source for complete line of refrigerated display equipment. Write for franchise details.



SHERER-GILLETT CO., MARSHALL, MICH.

Your refrigeration parts and supply
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Extra features equivalent to
32 or more Special models
are STANDARD in every M-H Polartron.

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Refrigeration Controls and Control Systems



Refrigeration Repairman Training Program Now Up To Local Groups

(Concluded from Page 1, Column 5)
tivities for quick action in launching the training program.

I. Before the first meeting is adjourned it is recommended the Training Committee obtain:

1. Applications from members to act as instructors.
2. The number of trainees required by the members and the names and number of trainees whom the members wish to submit as students in the training course.

This information is necessary before the local vocational school director can function.

II. Contact the War Manpower Commission Director for the names of the head of the local vocational school, the head of the local U. S. Employment Service, and the Director of Training, WMC.

First step: Contact the head of the local vocational school.

The head of the local vocational school will arrange for space, textbooks, and instructors, and will be ready to commence instruction immediately. The local vocational school is prepared to supervise the instructors and work with them throughout the course.

Second step: Contact the head of the local office of USES.

U. S. Employment Service will advertise for the men needed, and will submit them to the contractors requiring help. The USES will also clear any trainees that the contractors may have ready to enroll in the course. This is a requirement in all defense areas.

Third step: Contact the Director of Training, WMC.

The Director of Training, WMC, is prepared to institute job instruction training for the mechanics who may be used by training on the job. Bureau of Training also has available the other courses as discussed in the Training Program Statement for supervisors, foremen, etc.

(In communities where government offices do not exist, it is suggested that the local council contact the local school superintendent who will cooperate in the contact with the

State Office of Education, and in most cases will create a local vocational school with the assistance of a representative from the office of the State Director.)

A standard course and a standard text are available for any training program adopted by the Local Councils, although the local groups can also vary the standard procedure if they wish. The standard course covers a total of 201 hours of classroom and laboratory work and is divided into three parts: (1) general, (2) domestic, (3) commercial.

This standard training course is available without charge through the local Vocational School Director at the request of the Training Committee. Federal funds have been made available to the local Vocational School to finance the cost of the training course, including the salary of instructors, text material, and rental of space if necessary.

There are a variety of ways in which the standard course may be used to meet different local needs. Plan recommended is to use the course for training new, inexperienced personnel who will be enrolled in evening classes, with class periods of three hours per evening, three evenings per week, until the course is completed.

One alternative is to enroll persons employed in less essential jobs in evening classes who will accept and are assured employment in the industry upon completion of the training.

In some instances the Training Committee may arrange with the employers to excuse the trainees from work for two or three hours each day to enable them to attend a day school. Where the need is urgent and proper arrangement can be made, the employers may elect to hire trainees and allow them to spend full time in training until the course is completed.

WPB Frees Copper For Refrigeration Systems

(Concluded from Page 1, Column 3)
where the length would not exceed 15 feet.

Text of the revised schedule follows:

(Limitation Order L-126, Schedule VI as Amended Jan. 11, 1944)

Required Specifications for Service Connections

§ 1071.8 Schedule VI to Limitation Order L-126—(a) Definitions. For the purpose of this schedule:

(1) [Deleted Jan. 11, 1944].
(2) "Service connection" means any pipe or tubing joining any part of a refrigeration or air conditioning system to a water or drain outlet. As used in this schedule, the term "service connection" refers only to such connections to be used in connection with a "system" as defined in paragraph (a) (1) of Limitation Order No. L-126.

(3) [Deleted Jan. 11, 1944].

(b) Required specifications. Pursuant to Limitation Order L-126, the following required specifications are hereby established for refrigerant and service connections:

(1) No person shall use copper or copper base alloy pipe or tubing for:

(i) [Deleted Jan. 11, 1944].

(ii) Any service connections.

(c) Applicability of order. (1) The required specifications established by paragraph (b) (1) of this schedule shall apply to all service connections: **Provided, however,** That the foregoing shall not prohibit:

(i) The use of copper or copper base alloy pipe or tubing for service connections on refrigeration or air conditioning systems to be used aboard ship or at advanced bases by the Army and Navy of the United States, the Maritime Commission, or the War Shipping Administration; or

(ii) The use of copper or copper base alloy pipe or tubing for service connections on refrigeration or air conditioning systems, the plans of which had on April 6, 1943, been drawn and accepted by or for the account of the Army or Navy of the United States, the Maritime Commission, or the War Shipping Administration, to the extent that such plans require construction, design or materials not in accordance with the provisions of this schedule.

(d) [Deleted Sept. 30, 1943].

Issued this 11th day of January 1944.

J. F. Lebor Is Appointed York Corp. Treasurer

YORK, Pa.—John F. Lebor has been named treasurer of the York Corp. Mr. Lebor has served as assistant treasurer of the company since 1941.

Mr. Lebor joined York in 1940 as assistant to the executive vice president, E. A. Kleinschmidt. Before that he was engaged in financial work in New York City for a period of 10 years with the firm of Scudder, Stevens and Clark and the Radio-Keith-Orpheum Corp.

Parts Flown In For New Caledonia Hospital

WELLINGTON, New Zealand—Pre-fabricated here and then shipped to New Caledonia, some parts going by air, a new hospital has been erected in New Caledonia, complete with its own power plant, refrigeration equipment, and other facilities. "The finest hospital in the South Pacific" is what Col. Alan A. Tennent, recently commanding the hospital, calls it.

POST-WAR

- Plans are Complete
- Products are Engineered
- Models are Being Field-Tested

AND HERE IS AN OPPORTUNITY
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SALES ENGINEERS

Here is a splendid immediate opportunity for future-minded sales engineers. The men we want must be aggressive, alert, and equipped with a sound background of commercial sales in the refrigeration field. Write at once, outlining your qualifications; address A. E. Cadwell, Sales Manager.

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It takes more than a formula to
make a product outstanding. It
takes skill and craftsmanship
throughout every department.
These are the "plus values" in
Virginia products.



"VIRGINIA" REFRIGERANTS
AGENTS FOR KINETIC'S "FREON-12"

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA



EXTRA DRY ESOTOO METHYLENE CHLORIDE V-METH-L

NOW IN COMMERCIAL PRODUCTION

"Freon-22"

THE TREND OF QUICK-FREEZING TEMPERATURES IS DOWNWARD

At the A.S.R.E. Convention held in Philadelphia on December 7, 1943, speakers emphasized that temperatures in cold storage operations were going lower. Kinetic believes this and considers it a sound trend.

The time element in quick-freezing is of more commercial importance than the temperature. For example, at -40°F . the capacity of any quick-freezing compartment is much greater than at -10°F . The adoption of low freezing temperatures not only insures quality but economizes on space. This will certainly bring about rearrangement of the storage space as new home quick-freezers are designed.

TO MEET THE DEMANDS FOR LOWER TEMPERATURES . . .

Kinetic Chemicals, Inc., is glad to announce the commercial production and sale of monochlorodifluoromethane, otherwise known as and trade-marked "Freon-22."

This "low temperature" refrigerant is now available to manufacturers and through the distributing organization of Kinetic Chemicals, Inc., to those consumers who have already installed machinery in which it is the re-

frigerant, and to those who, having sound engineering advice, desire to convert their "low pressure apparatus" to its use. The refrigerant, up until the present time, has been synthesized in a semi-works scale plant. Now a small commercial plant has been established and the price reduced to less than half the 1943 figure. The pricing at present is an intermediate step in the determination of final price based on cost.

The raw materials for "Freon-22" are more costly than those used in making "Freon-12" and it cannot be predicted at this time that "Freon-22" can ever be sold at the price level of "Freon-12." However, the ultimate price level will be such that "Freon-22" can be afforded for all low temperature installations, including home sharp freezers, cold storage locker plants, cold storage houses, and even ice plants. The advantages in the use of "Freon-22" are many, such as high volumetric capacities of compressors with higher back pressures, so that a smaller and less costly compressor may be designed to do the work of a larger and more expensive one.

The small added cost of using "Freon-22" in low temperature units will pay handsome returns on capital and operation costs, as well as improve the quality in low temperature installations.

"Freon-22" is not at this time under WPB allocation. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington, Delaware.

LET'S ALL BACK THE ATTACK!



A "Freon" Safe Refrigerant for every purpose and for every machine design

*"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

Program For the Training of Refrigeration Service Manpower on a National Scale

EDITOR'S NOTE: The Manpower and Training Program for the Refrigeration Industry, designed to provide manpower to handle the demand for refrigerator repair work, has been launched on a national scale (see story on page 1).

Following are some excerpts from the Program Statement on the plan which has been sent out to the field coordinators from the office of W. R. Kromer, Director of Training, 1935 E. 24th St., Cleveland (14), Ohio. These excerpts are published here to give readers a comprehensive idea of the program:

ORGANIZATION

I. The National Refrigeration War Council

The National Refrigeration War Council is composed of members representing all branches of the refrigeration industry including servicing agencies, servicing dealers, distributors, suppliers, and manufacturers. It was created in response to a need for united industry representation at the national level during the war emergency. The Council has held several meetings with various government agencies on national industry problems which have resulted in a number of important accomplishments.

II. The National Refrigeration Service Manpower Committee

At the suggestion of the War Manpower Commission, the War Council

appointed a task committee to develop a nation-wide manpower and training program for the industry. The committee is known as The National Refrigeration Service Manpower Committee and is composed of 13 representative members of the industry and the interested government agencies.

The principal functions of the subcommittee are as follows:

- To formulate a national manpower program for the industry.
- To select an individual from industry to act as the National Manpower & Training Director.
- To advise and assist the Director in the organization and administration of a national training program for refrigeration repairmen.

The National Manpower and Training Director

The National Director of Manpower and Training represents the commit-

tee in the development of a national training program in cooperation with the Bureau of Training of the War Manpower Commission and the government war training agencies.

Some of his principal functions and responsibilities are:

- Determine the training needs of the industry.
- Plan a standard course of training for refrigeration repairmen which will have universal application.
- Develop a plan to band together the refrigeration industry and assist in the establishment of manpower and training programs in all communities throughout the nation.
- Evaluate the effectiveness of local training programs and recommend necessary revision or deviation.
- Develop a system of field reports on program operations and progress.
- Serve as liaison officer between the government training agencies and the industry to insure complete coordination.

III. Temporary Field Coordinator

In order to place the Refrigeration Training Program into effect on a nation-wide basis with a minimum of delay, it is essential that the industry be organized in all communities where manpower problems exist. To get this preliminary organization work

started immediately, the Director of Training has arranged with the National Council of Electric Operating Companies to invite local Power Companies to designate a member of their staff who will serve as Temporary Field Coordinator. The principal function of the Temporary Field Coordinator will be to contact representatives of all refrigeration service agencies and related industries in the communities served by the Power Company and arrange with them to form a Local Emergency Refrigeration Service Council. In carrying out this function of organizing local Councils, the Temporary Field Coordinator will be responsible for:

- Arranging for an initial meeting of representatives from all establishments connected directly or indirectly with the refrigeration industry including service agencies, servicing dealers, distributors, supply houses, field representatives of manufacturers, and related organizations such as motor repair and power supply establishments.
- Present the entire Manpower Program to the local industry representatives at the first meeting in accordance with instructions received from the National Director of Training.
- Assist the local industry representatives in organizing a local "Emergency Refrigeration Service Council." Suggested constitution and by-laws for local councils are incorporated in the appendix.

D. Guide the activities of the Council until officers are elected and the group has selected a permanent Field Coordinator.

E. Furnish a complete report to the National Training Director on each Council established as requested.

IV. Field Coordinator

The permanent Field Coordinator is to be selected immediately by the local Emergency Refrigeration Service Council and is the official representative of that group. His principal function is to see that continuity is achieved in the operation of the local training program. As the representative of the local Council, the Field Coordinator will maintain a close working relationship with the National Training Director. To be effective, he must be in a position to devote considerable time and effort to insure that the program will be successfully accomplished on schedule.

Some of the responsibilities of the Field Coordinator include:

A. To coordinate the activities of the Local Council and government agencies participating in the program.

B. Act as advisor to the Local Council and assist the sub-committees in the conduct of their activities with the government agencies.

C. In cities where cooperating government agencies maintain Regional or State offices, the Field Coordinator will develop a close working relationship with these offices. He will act as liaison officer for field coordinators in other neighboring communities who may have urgent business with these offices that requires personal attention.

D. Maintain records of progress and report as requested to the National Director.

V. The Local Emergency Refrigeration Service Council

THE FOCAL POINT OF THE MANPOWER PROGRAM FOR THE REFRIGERATION INDUSTRY IS THE LOCAL EMERGENCY REFRIGERATION SERVICE COUNCIL. THIS IS TRUE BECAUSE THE INDUSTRY IS HIGHLY DECENTRALIZED AND ENCOMPASSES SUCH A GREAT NUMBER OF SMALL INDEPENDENT ESTABLISHMENTS THAT EFFECTIVE ACTION IN MEETING ITS MANPOWER AND RELATED PROBLEMS CAN BE ACHIEVED ONLY THROUGH UNITED EFFORT. BY POOLING THEIR REQUIREMENTS AND RESOURCES, THE LOCAL INDUSTRY IS IN A FAR BETTER POSITION TO PRESENT THEIR NEEDS AND OBTAIN RESULTS. IT IS, THEREFORE, RECOMMENDED THAT THE INDUSTRY ORGANIZE LOCAL EMERGENCY REFRIGERATION COUNCILS WHICH WILL BE REPRESENTATIVE OF THE ENTIRE REFRIGERATION INDUSTRY IN THE COMMUNITY OR AREA. THE PLAN FOR ORGANIZING THESE COUNCILS AND THEIR COMPOSITION IS EXPLAINED UNDER ITEM III.

The immediate function of the Local Council is to develop a definite manpower and training program based on the plan of the Refrigeration Manpower Committee which will adequately meet the local manpower needs. The complete cooperation of the several government agencies concerned with various phases of the problem such as recruitment and training, wages and prices, defer-

(Continued on Page 7, Column 1)

The "BRAINS" of Variable Capacity



The illustration above shows the simple Variable Capacity control mechanism which is located in the front cover casting of the famous Chrysler Airtemp Heavy Duty Radial Compressor.

When this mechanism is adjusted externally, oil from the pressure oiling system of the radial compressor supplies the force by means of which cylinders are made to function—cut in or out—automatically, according to the load in the cooled or refrigerated area.

Each cylinder in the Airtemp Radial Compressor represents a step of capacity. As the load increases more cylinders cut in,

as temperature drops cylinders cut out. Thus, the peaks and valleys of short-cycling, necessary with ordinary compressors, are eliminated.

Temperatures are held constant, regardless of load fluctuations. Operation is smooth, practically free from vibration. You can balance a penny on the Chrysler Airtemp Radial Compressor at 1750 R.P.M.



There's a Chrysler Airtemp Variable Capacity Radial Compressor to meet the needs of most air conditioning and refrigeration requirements. Put your temperature and humidity control problems up to Airtemp.

Features

Automatic Variable Capacity Control • Unloaded Starting • Direct Connected • Simplified Installation • Non-Flexing Valves • Practically No Vibration • Interchangeable Parts • No Special Foundations Needed • Light in Weight

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CHRYSLER AIRTEMP

AIRTEMP DIVISION OF CHRYSLER CORPORATION • DAYTON, OHIO

"Packaged" Units 3 & 5 H. P.—Direct Expansion and Water Cooling Systems—Commercial Refrigeration

Tune in Major Bowes every Thursday, C.B.S., 9 p.m., E.W.T.

YEARS AHEAD ... but just in time

THE RECALIBRATOR

That "Recalibrator" is one of the most important advances ever made in gauge design. It's the first completely sound way to correct a gauge that has been knocked out of adjustment.

Fortunately the "Recalibrator" was ready and waiting when wartime conditions demanded harder, more dependable service from gauges and dial thermometers.

If a "Recalibrator" gauge is knocked out of adjustment, the twist of a screwdriver wipes out the error in just a few seconds. It makes the gauge accurate again at all points on the scale—something that has never been satisfactorily accomplished before. For gauges you can keep completely accurate, always look for the "Recalibrator"—the finishing touch to a fine gauge.

JAS. P. MARSH CORPORATION
2067 Southport Avenue, Chicago 14, Illinois



The "Recalibrator" is available in all Marsh Gauges, standard in all Marsh Dial Thermometers. It is typical of the advanced design you'll find throughout the broad Marsh line—all products of 75 years of specialization.

MARSH
Refrigeration Instruments

Functions Other Than Training Suggested For Local Councils

(Continued from Page 6, Column 5)
ments, equipment and supplies is available. It now remains for the industry to organize itself locally and make its specific needs known.

THE NEED IS URGENT AND TIME IS SHORT. WHATEVER IS DONE MUST BE ACCOMPLISHED BEFORE THE NEXT RUSH SEASON TO BE OF HELP. In order to expedite the work of the Local Council in performing its primary function, it is recommended that four committees be appointed to handle various parts of the total program. These committees are identified as:

The Recruitment and Training Committee.

The Selective Service Committee.

The Price and Wage Committee.

The Membership and Supplies Committee.

The responsibilities assigned to each committee are as follows:

A. Recruitment and Training Committee

1. Determine the total number of additional refrigeration repairmen that must be provided for the industry.

2. Arrange with the local office of the USES to recruit and select the number of additional workers needed.

3. Plan a complete training program in cooperation with the War Manpower Commission training representative for training the additional refrigeration repairmen needed.

(a) Arrange for a special training course for instructors recruited from the industry.

(b) Arrange for a special training program for the mechanics who will supervise the trainees on the job.

(c) Arrange for an organized course of training for new employees following the standard course outline on training refrigeration repairmen developed by the Vocational Department of the U. S. Office of Education.

4. Arrange for employment of trainees in local establishments.

5. Assist in selection of instructors for training courses from applications of local council members.

6. Secure instructional material to supplement that available in the local vocational school for the training course such as models, charts, films, etc., as indicated on the standard course outline.

B. Selective Service Committee

1. Contact local draft boards on memoranda pertaining to critical occupations.

2. Act on deferment requests for members of the Local Council.

3. Establish procedure with USES on part they play in deferment of men employed in a critical occupation.

C. Price and Wage Committee

1. File form 10 with WLB for fair

and equitable wage scale for the local industry.

2. Establish and maintain personal contact with WLB and OPA local and regional offices.

3. File joint appeal with OPA for a maximum standard service rate for the area.

D. Membership and Supplies Committee

1. Maintain and, if possible, enlarge the membership of the Local Council.

2. Obtain the full cooperation of all phases of the industry in the program of the Local Council.

3. Represent the Local Council in the industry relationships with the War Production Board.

OPERATION OF THE LOCAL MANPOWER PROGRAM

I. Program Objectives

The manpower program has two major objectives: (1) to retain in so far as possible the existing personnel employed in the industry; (2) recruit and train new personnel to replace those that have been lost to the industry. These objectives can be achieved only through organized and united effort with both industry and government sharing in the responsibility.

The program described here provides a method for bringing together the full resources and facilities of both industry and government in this undertaking.

II. The Work of the Coordinator

The success or failure of the local manpower program will to a large extent depend upon the Coordinator selected by the Local Council. In a real sense, he is the General Manager of the program operation, with complete responsibility for seeing that all the activities assigned to the various committees are properly coordinated and successfully carried out. This position will require a person of exceptional talent and a high degree of administrative ability.

III. Recruitment and Selection of Workers

In the past refrigeration establishments have relied upon their own solicitation to obtain new employees. Since the war emergency, however, this method has not proved entirely successful, and many companies are now utilizing the facilities offered by the U. S. Employment Service Offices. At the present time there are many communities designated as "critical" by the War Manpower Commission where the recruitment of new workers is governed by Manpower Commission stabilization orders. The local office of the U. S. Employment Service will advise the Committee on the provisions of the stabilization order in effect in the area so that the re-

(Continued on Page 8, Column 1)



An old time rivet heater would be amazed, if not scandalized, at what they do to aluminum rivets in plane factories.

They don't heat them at all—rather, they chill them to low temperature in freezers.

Why? Because certain aluminum alloys desirable for rivets increase in strength and hardness through aging at room temperature. These maximum properties, so desirable in the finished product, are gained at the expense of workability. The aging is fine *after* the rivets are driven—detrimental before. The rivets may crack in driving.

Refrigeration to low temperatures retards or prevents this aging, assures good driving qualities.

"Detroit" Refrigeration Controls and Expansion Valves are in wide use on this task of refrigerating rivets. Wherever refrigeration can serve the war effort, "Detroit" Refrigeration Controls are to be found. If you have an industrial refrigeration problem, our engineering staff and representatives are at your service.



DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICHIGAN

Division of AMERICAN Radiator and "Standard" Sanitary Corporation

Canadian Representatives—Railway and Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators

IS HOUSTON, TEXAS IN Your Postwar Sales Plans?

OUR postwar plans include the addition of a few top grade appliances to the well-known lines now being distributed by us in the Houston territory. We are firmly established, experienced, financially sound.

Interested manufacturers are invited to write the company—or to contact Mr. J. A. Walsh who will be at the Hotel Pennsylvania, New York City, from January 26th to February 2nd.

J. A. WALSH & CO. Inc.
(FORMERLY Air Conditioning Company)

Distributors • Engineers

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HOUSTON 1, TEXAS

How Government Agencies Will Aid Training Effort

(Continued from Page 7, Column 5)
cruitment campaign may be planned accordingly.

In planning a campaign to recruit additional workmen for local refrigeration establishments, it is recommended that the Training Committee work closely with the local manager of the U. S. Employment Service, who is in a position to advise on the local labor market conditions as well as to supply the types of recruitment devices that will prove most successful. The use of radio, newspaper advertisement, posters, and other advertising media should not be overlooked in planning the campaign.

Before requesting the U. S. Employment Service to assist in recruiting new workers, it is important that the Training Committee determine exactly the number of additional refrigeration repairmen needed in the area, the minimum qualifications required of applicants for employment, and complete information on such important items as wages, hours of work, place of employment, and conditions of employment.

The U. S. Employment Service will need this information in recruiting and selecting workers for referral to individual employers or a central selection sub-committee appointed by the Training Committee to represent the employers in pre-selecting applicants referred for employment.

An impartial and equitable system for referring applicants to prospective employers such as an alphabetical or numerical arrangement should be de-

veloped so that all companies will receive equal consideration. Through the training committee members of the Local Council may refer trainees to USES for qualification and enrollment.

In establishing minimum qualifications for applicants, the Committee should give careful consideration to the labor market conditions prevailing in the community. In tight labor market areas the minimum acceptable requirements will of necessity have to be established at a lower level than in relatively loose labor market areas to permit successful recruitment. Generally speaking, most new employees will probably be secured from such groups as older workers and 4-F's, persons currently employed in less essential work, and returning veterans.

Regardless of their other qualifications, all new employees must be physically able and mechanically inclined to succeed on the job.

IV. Planning the Local Training Program

In planning a local training program for refrigeration repairmen, the Training Committee is urged to contact the director of the nearest War Manpower Commission office and request that a representative of the Training Division be made available to assist them.

The WMC training representative is in a position to advise the Committee on all of the training services available from the government, and will

arrange to make them available as required in carrying on the program.

The Bureau of Training will provide copies of this plan to all WMC field offices so that the Training Representatives will be thoroughly conversant with the details of the Refrigeration Manpower Program.

In planning a local training program, it is essential that the Training Committee know exactly how many workers are to be trained and the types of training assistance required. Arrangements for the recruitment and employment of new workers should be completed before a definite training program is attempted.

In the event the local vocational school does not have qualified instructors on the staff to teach the Standard Course for refrigeration repairmen, the Training Committee should recommend skilled mechanics from the industry who may be selected and trained to serve as instructors.

In many instances the Training Committee will be requested to provide necessary charts, models, exhibits, and other facilities needed in the training program which are available only from the industry.

V. Standard Course for Refrigeration Repairmen

To expedite the establishment of local training programs, a standard course for training refrigeration repairmen was developed. This standard training course is designed to give new workers the fundamental knowledge and skill required in servicing all refrigeration equipment.

The course covers a total 201 hours of classroom and laboratory work and is divided into three parts: (1) Gen-

eral, (2) Domestic, (3) Commercial.

This standard training course is available without charge through the local Vocational School Director at the request of the Training Committee. Federal funds have been made available to the local Vocational School to finance the entire cost of this training course including the salary of instructors, text material, and rental of space if necessary.

Local Vocational Schools will see that there is adequate text material available for each member of the class and for the instructor.

There are several ways in which this standard course may be used to meet different local needs. The plan recommended is to use the course for training new, inexperienced employees who will be enrolled in evening classes. Class periods of three hours per evening, three evenings each week until the course is completed.

It may also be advisable to enroll persons employed in less essential jobs in evening classes who will accept and are assured employment in the industry upon completion of the training.

Alternate Plans

In some communities the Training Committee may arrange with the employers to excuse the trainees from work for two or three hours each day to enable them to attend a day school.

Where the need is urgent and proper arrangement can be made, the employers may elect to hire trainees and allow them to spend full time in training until the course is completed.

VI. Government War Training Services

Through the Bureau of Training, the specialized training services of the four war training agencies of the government are made available to the refrigeration industry without charge, in meeting its training needs.

Each agency was established by Congress to assist war industries and essential civilian activities in training the manpower required in the successful prosecution of the war program. Federal funds have been made available to finance the cost of these services.

A digest of the training services performed by the constituent and co-operating agencies of the Bureau of Training is presented briefly so that local training committees may quickly

compare their training needs with the Federal training services available.

The following agencies have facilities which can be utilized by the refrigeration industry:

- (1) Vocational Training for War Production Workers.
- (2) Training Within Industry Service.
- (3) Engineering, Science, and Management War Training Service.
- (4) Apprentice-Training Service.

For more complete information concerning the facilities and services available through the Bureau of Training and the war training agencies, it is suggested that the Training Committees contact the nearest office of the War Manpower Commission, the local U. S. Employment Service office, or any one of the training agency representatives in the local area.

In addition, the Training Committees may obtain a copy of a publication of the Bureau of Training entitled, "Training Services Available Through the War Manpower Commission," which describes each of these training services in more complete detail.

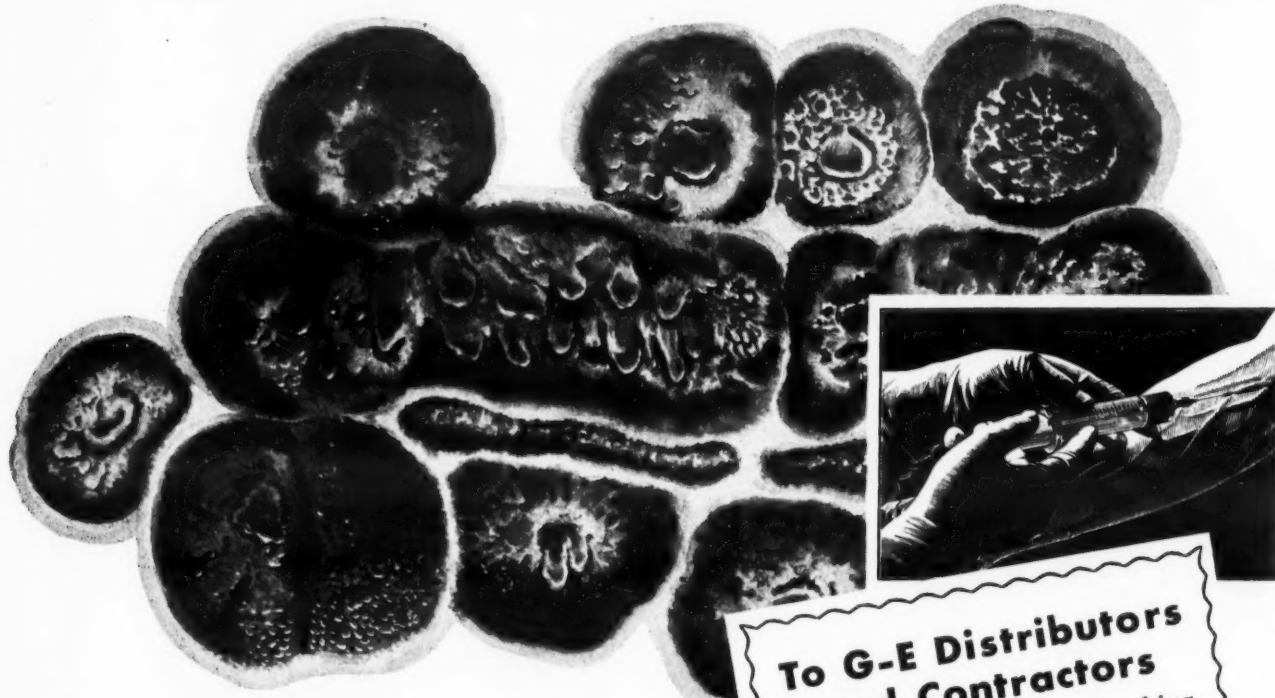
Vocational Training for War Production Workers (1)

The Public Vocational Schools offer vocational training for war production industries through Federal funds provided by Congress for the Vocational Training of War Production Workers. The funds are certified to the States by the U. S. Office of Education, and used by the various State Boards for Vocational Education to meet the cost of training for War Production occupations approved by the War Manpower Commission when such training is needed and when it is feasible to establish and conduct a training program. THE WAR MANPOWER COMMISSION HAS RECENTLY APPROVED REFRIGERATION REPAIRMEN AS WELL AS SEVERAL OTHER OCCUPATIONS IN THE REFRIGERATION INDUSTRY AS ELIGIBLE FOR THIS SERVICE.

State Boards for Vocational Education and local vocational schools are prepared to cooperate with the refrigeration industry in organizing a vocational training program for persons engaged in that industry.

Representatives of State Boards and local vocational schools are available

(Continued on Page 9, Column 1)



From green mold —a new weapon against death

From the green mold that forms on bread and cheese, science has evolved a new bacteriostatic agent of extraordinary potency . . . *penicillin*, regarded as one of the most striking medical developments since the introduction of the sulfa drugs.

In the production of penicillin, *air conditioning and refrigeration* play essential roles at three important stages . . . maintaining correct temperature and humidity for production of the mold; providing low temperatures which prevent destruction of the drug while in solution; and speeding the dehydration of the solution.

Since penicillin production is relatively new, no standard process has yet been adopted. Hence air conditioning and re-

To G-E Distributors and Contractors

Penicillin is the attention-catching subject of this G-E advertisement—latest in the series designed to stimulate interest in new applications of air conditioning and refrigeration. Appearing in *Time*, *Newsweek*, *Business Week* and industrial publications, it will reach many of your prospects for new installations in key industries.

Refrigeration installations are usually individually designed. Here is one of the reasons why penicillin manufacturers turn to G-E . . . pioneers in adapting air conditioning and refrigeration to an almost endless list of industrial uses.

If industrial air conditioning or refrigeration can help you in war production today, or in postwar production tomorrow, turn to G-E with confidence . . . for engineering advice and for equipment of proven quality.

★ BUY WAR BONDS ★

General Electric Company, Air Conditioning and Commercial Refrigeration Divisions, Section 441, Bloomfield, New Jersey.

Industrial Refrigeration by
GENERAL ELECTRIC

Air Conditioning FOR TOMORROW

NIBCO WROT
FITTINGS AND TUBULAR PARTS

NIBCO Fittings are so accurately made that they save substantial sums in assembly costs. Specially designed equipment and a unique patented process make NIBCO WROT Fittings absolutely "round and square" and easy to align. Individual inspection with plug gauge tests of every item eliminates all guesswork. More than 1,000 standard fittings and other items are shown in our Air Conditioning and Refrigeration Catalog. We also welcome your inquiries for special tubular or cast parts. Remember Nibco in your post-war planning.

NORTHERN INDIANA BRASS CO.
ELKHART, INDIANA
VALVES AND FITTINGS SINCE 1904

Recommended Training Plan Calls For Evening Classes, Daytime Work on the Job

(Concluded from Page 8, Column 5)
for consultation and will cooperate with the refrigeration industry and the WMC in establishing a training program for the industry. The following services are available:

- (1) Selecting and training experienced refrigeration men as instructors.
- (2) Establishing and conducting such courses as may be required for new workers and also for those employed in the maintenance of refrigeration equipment.
- (3) Training foremen and supervisors in the techniques of supervision and instruction on the job.

Training Within Industry Service (2)

Three separate, although related, programs are offered to refrigeration companies by Training Within Industry. These are Job Instruction, Job Methods, and Job Relations Training. They are ten-hour practice units available to supervisors. They all consist of five two-hour sessions given at times convenient to the company and without cost.

Job Instruction is an intensive program designed to give the supervisor of experienced workers practice in "how to break in" men on new jobs.

Job Methods helps to make more effective use of the manpower, materials and machinery now available in a plant through using fully the inventive ability of the supervisory force. This program gives supervisors practice in how to improve methods of doing jobs for which they are responsible.

Job Relations gives supervisors practice in how to work with people in a way that gains cooperation and promotes teamwork. It provides a good foundation for everyday relations with the people whose work they direct and sets up a pattern for handling the problems that do arise.

Engineering, Science, and Management War Training Service (3)

This service, or ESMWT as it is often called, is a Federally financed, cooperative plan for providing war training in colleges and universities which offer tuition-free, short courses of college grade for essential war work, including refrigeration. The program is operated through the U. S. Office of Education under the Federal Security Agency.

Only short courses, lasting generally from 12 to 16 weeks, can be approved. They are offered under the educational supervision of 214 colleges and universities throughout the nation which have been selected for their qualifications to offer instruction in each of the fields for which they have been approved.

High School graduation or equivalent background, is the minimum qualification for entry into any of the courses. Employed persons may be accommodated, usually in part-time evening courses designed to prepare them for positions of greater difficulty and responsibility. Others may be admitted to full-time or part-time courses, in preparation for specific jobs in essential activities.

Apprentice-Training Service (4)

In addition to its primary function of planning and developing long range apprentice-training programs, the Apprentice-Training Service also is available, to assist industry to set up over-all training programs designed to place new workers in productive work within the minimum of time, and provide planned training for up-

grading of experienced workers. Such over-all training programs provide for on-the-job training coordinated with the training service supplied by other agencies.

The Apprentice-Training Service since 1934 has cooperated with National, State, and local employer and labor organizations in setting up training programs for apprentices.

Through the experience and contact thus obtained, the Service is qualified to assist industry on training problems in the field of labor relations, such as problems of seniority, hours of work, wages, and the classification of workers.

VII. On-the-Job Training

If the recommended plan is followed, it is important that the new workers enrolled in evening classes also receive training while working on the job during the day. The quality and effectiveness of the training given on the job will depend upon the ability of experienced mechanics to impart their "know how" to the new worker.

The short intensive ten-hour Job Instruction plan for supervisors (explained on page 12) will meet this need. This service is available through Training Within Industry. It is recommended that the Training Committee make arrangements to have all mechanics who supervise trainees on the job attend a ten-hour J.I. unit. The nearest WMC office will provide this service on request.

It is further recommended that employers establish planned on-the-job training programs which will provide for the orderly upgrading and promotion of the workers. The Apprentice-Training Service is available to assist industries in setting up such on-the-job training programs. The assistance of this agency may be obtained through the WMC Training Representative or directly from the agency.

VIII. Utilization of Existing Manpower

The Department of Manpower Utilization is available to advise and assist the local Councils in solving problems that may be interfering with full utilization of existing labor within local organizations.

Attention should be given to the possibility of meeting labor needs in part through the most effective utilization of those persons on the work force. For example, every day the worker is absent means a day lost. Consequently, where absenteeism is widespread, one method of meeting labor demands is to determine the basic reasons for workers' not staying on the job and remedying these causes.

Many other factors may give rise to poor utilization such as inadequate supervision, low morale among workers, poor organization of work, work methods, and unsatisfactory wages, hours, etc. The extent to which these conditions may exist in the Refrigeration Repair Industry will vary from employer to employer, but these conditions should be examined by employers to ascertain whether or not they may stand in the way of workers' doing their best.

Two Industry Holiday Affairs of Note



Refrigeration Contractors Association of Detroit not only bought the turkeys but members, working in shifts, prepared and served the Christmas dinner at the Detroit U.S.O. "Dishing it out" at the time the picture was taken are (back row) F. Schuster, Superior Refrigeration Service; Mrs. Schuster; Mrs. C. W. Landrith, Jr., C. W. Landrith, Jr., and R. Cloud, Superior Refrigeration Service; (front row) Mrs. G. Kawaleswiski of the Association office; T. H. Mabley, Mechanical Heat & Cold, Inc.; C. W. Landrith, Sr., Superior Refrigeration Service; Mrs. Landrith.



Herman Goldberg's Christmas parties have become an "institution" in the industry. Here the host lines up with his talent to greet the crowd.

How to Choose a Good Location for a Postwar Appliance Store

That's the Subject of Hotpoint's Bulletin No. 2 in "Planned Electrical Merchandising" Series



Typical of the practical help offered retailers for postwar planning is Hotpoint's Bulletin "How to Choose a Good Location for an Appliance Store." There are 23 rules explained in detail in this bulletin. Be sure to get it, and others in the series.

If you're not on the mailing list already, better send in your name right away. You'll receive the first bulletin and others at 30-day intervals. They are mailed immediately, *without charge*, to any retailer who wants them—not only Hotpoint dealers or prospective dealers, but *any* retail merchant who is sufficiently interested to write requesting them. Use the coupon below.

One Purpose — to Help Dealer

These bulletins are about *your* business. *Your* store, *your* customers right in *your* community — not about Hotpoint products. They are loaded with practical, field-

tested suggestions that will help any merchant improve his business volume.

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Operating Characteristics of 'Freon-22' In Typical Low Temperature System

Craig Makes Comparison With Freon-12; Describes Certain Problems To ASRE

PHILADELPHIA—Operating characteristics of the refrigerant "Freon-22" in an actual installation and some comparisons of this refrigerant and "Freon-12" were described by J. W. Craig, refrigeration engineer for the Crosley Corp., in his paper "Freon-22 and Its Application to Low Temperature Refrigeration Units" presented before the American Society of Refrigerating Engineers annual meeting here last month.

Mr. Craig presented data obtained from the operation of a low temperature room for testing equipment for the Army Air Corps and the Navy, with a temperature range of 150° F. to -60° F. being required.

It was decided to use monochlorodifluoromethane, "Freon-22," as the refrigerant in this system, because of its low boiling point which would produce the low temperatures required with a higher operating back pressure on the condensing units, thus eliminating the necessity for double staging or multi-staging to obtain the low temperatures required. An additional factor in the decision to use "Freon-22" as a refrigerant in this system was to obtain first hand actual experience in the performance of this refrigerant in conventional

equipment for possible application in future design considerations.

Mr. Craig described the installation, and covered briefly the properties of F-22 as compared to F-12, making the following observations:

Freon-22

"Freon-22," monochlorodifluoromethane, is one of the family of the "Freon" refrigerants. This refrigerant has the chemical formula CHClF_2 . The boiling point of "Freon-22" at atmospheric pressure is -41.4° F. as compared to the boiling point of "Freon-12," -21° F.

In order that direct comparisons be made under an average operating condition, data was prepared at -60° F. evaporator temperature and at an 80° F. condensing temperature for a one-ton load.

PRESSURES WITHIN LIMITS

At a temperature of 80° F. in the condenser, the saturated pressure will be 84.06 lb. gage for "Freon-12" and 145 lb. gage for "Freon-22," an increase in head pressure of approximately 61 lb. This is a very small increase in pressure and well within the safety limits existing with the average conventional, well construct-

ed compressor.

At a temperature of -60° F. in the evaporator, the saturated pressure will be 19.00 in. Hg. for "Freon-12" but only 11.89 in. Hg. for "Freon-22," an increase in back pressure of 7.11 in. or 3.49 P.S.I.

It is this increase in back pressure that will account for an improvement in volumetric efficiency. Under such a condition, the compression ratio for "Freon-22" is 18.05 to 1 while for "Freon-12," under the same conditions, the ratio would be 18.37 to 1.

REFRIGERATING EFFECT

The refrigerating effect per pound of "Freon-22" is approximately 42½% greater than that of Freon-12, requiring 30% less pounds of "Freon-22" per minute for the same refrigerating effect. This factor should be considered only in conjunction with density value for the establishment of liquid line sizes and expansion valve orifice diameters.

The volume of "Freon-22" liquid at 80° F. is approximately 10% more than "Freon-12" liquid at the same temperature, thus requiring less liquid refrigerant as the charge in the system. Liquid volumes together with refrigerating effect per pound of the liquid will influence liquid line sizes and expansion valve orifice diameters as previously stated.

LIQUID VOLUMES

The volume of "Freon-22" liquid to be passed through the orifice of the expansion valve per minute for one-ton refrigerating effect will be 72.8 cu. in. as compared with 94.8 cu. in. as required for "Freon-12."

The cubic foot displacement per minute per ton of refrigeration, under the temperature and pressure conditions as stated in the tabulation when using "Freon-22," is 41.4% lower than for "Freon-12" under the same temperature conditions.

INCREASE IN CAPACITY

Therefore, it will be possible to either increase the capacity of a "Freon-12" compressor approximately 70% with the same bore, stroke, and speed or to reduce the speed of the present compressor.

Obviously, if the same bore, stroke, and speed are used with "Freon-22" a larger condenser and motor will be required to take care of the increased capacity.

"Freon-22" has substantially the same chemical stability, non-corrosive properties and solvent action in regard to construction materials as does "Freon-12" through the range of temperatures found in refrigerating systems.

Solubility of water in "Freon-22" is approximately eight times higher than the solubility of water in "Freon-12." Thus, there should be no separation of water from "Freon-22" at temperatures as low as -100° F. providing, of course, that the "Freon-22" does not contain more than .0025% by weight, which is the maximum contained in the "Freon-22" when obtained from the manufacturer.

"Freon-22" vapor is odorless at concentrations of less than 20% by volume in air which is equivalent to the release and vaporizing of 45.6 lb. of liquid into a confined space of 1,000 cu. ft. At concentrations higher than 20% by volume in air, the odor of "Freon-22" vapor is very mild and somewhat ethereal, being similar to carbon tetrachloride, the commonly used fire extinguishing fluid. "Freon-22" vapors in all concentrations are non-irritating to the eyes, nose, throat, lungs, or skin. Thus, gas masks or refrigerant absorbing materials are not required when handling any of these refrigerants.

ONE OF THE LEAST TOXIC

It is a well established fact that "Freon-22" as such is one of the least toxic refrigerants known. Complete and detailed data on toxicity will be found in Underwriters' Laboratories Report MH-3134 and have been placed by them in Group 5A with Freon-11 and carbon dioxide.

Formation of combustible mixtures by "Freon-22" under practical conditions even at the higher tempera-

ture is extremely unlikely and its fire hazard is, therefore, very small, such as is the case with methylene chloride. Underwriters' Laboratories Report MH-3134 also thoroughly covers the subject of flammability and explosiveness.

Due to the decision to use "Freon-22" in the Crosley installation, it was planned to use the simplest basic refrigeration system possible as the field experience with this refrigerant was limited.

Therefore, in specifying the equipment, all multiplexing of condensing units was avoided and no control valves were used other than solenoid valves in the liquid line and standard thermostatic and automatic expansion valves.

Refrigeration equipment consists of three distinct separate systems, each system containing its own condensing unit, oil separator, heat exchanger, solenoid valve, expansion valves and evaporator.

Purpose of three separate systems was to avoid all multiplexing as mentioned above and was to provide sufficient capacity for all types of equipment being tested as the types of products being tested varied greatly in their load and no load requirements. In this manner, the system could be operated using either one, two or three of the systems depending upon load requirements and temperature requirements.

EQUIPMENT IN INSTALLATION

The condensing unit of each system consists of a standard 3-h.p. body size twin-cylinder water-cooled unit. These units were equipped with 5-h.p., three phase, 220-volt, 60-cycle motors to carry the load during pull-down conditions. The displacement of the compressor is 34.36 cu. in. per revolution.

Standard refrigeration oil of 150 viscosity was used. Each condensing unit was equipped with an oil separator as it was thought advisable to keep as much oil as possible from the evaporator due to the low refrigerant temperatures in the cooling units.

The liquid line of each unit was equipped with calcium sulfate dryers and a commercial strainer with shut-off valves on each side of the strainers.

Each unit was equipped with a heat exchanger of 24,000 B.t.u. per hr. capacity. A solenoid valve was placed in the liquid line ahead of the expansion valves.

DOUBLE EXPANSION VALVES

Two expansion valves were used in each installation. One thermostatic expansion valve and one automatic expansion valve were installed in parallel.

Purpose of the thermostatic valve was to secure rapid pull-down charac-

(Concluded on Page 13, Column 1)

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Craig Tells About Refrigerant Flow Control Problem In 'Freon-22' Job

(Concluded from Page 12, Column 5)

teristics and the automatic valve was for the purpose of supplying refrigerant at constant suction pressures after equilibrium had been reached and the pull-down completed.

Two evaporators of the flooded type were installed in parallel on each unit. The basic rating of each evaporator was 107 B.t.u. per hr. per 1"TD. The total surface of each evaporator was 97.2 sq. ft., having 9.4 sq. ft. prime surface and 87.8 sq. ft. secondary surface.

Size of each evaporator was 7 in. high, 14 in. wide and 66 in. long. The length of liquid and suction line on each installation was approximately 15 ft. The liquid line is 1/2-in. OD soft annealed copper tubing and the suction line is 1 1/2-in. OD hard drawn copper tubing. A vibrasorber was placed in the liquid line between the dryer and filter and also in the suction line at the compressor inlet.

Each condensing unit is equipped with a high and low pressure cut-out, the high pressure cut-out being set at 195 lb. per sq. in., and the low pressure control set to cut-out at 25 in. Hg. vacuum. The cooling water for the condenser is controlled by a high pressure operated water valve set at approximately 135 lb. per sq. in.

2 FLOODED EVAPORATORS

As described above, two flooded evaporators were installed on each condensing unit. These two evaporators were placed horizontally, side by side, in the top portion of the low temperature area. Therefore, with the three separate condensing units, a total of three banks of cooling units of two evaporators each were installed in the low temperature room.

Each bank of cooling units was installed approximately on 1-ft. center distances between each pair of units in the tier. Directly below the lower bank of evaporators was installed a baffle for condensate removal, and below this baffle an additional baffle was installed with three fans. Each fan has a capacity of approximately 80 cu. ft. per min. and is of the puller type pulling the air over the entire bank of coils.

BLOWERS WERE USED

In the lower rear section of the room, a return air baffle was in-

stalled with two fans of the pusher type for returning the air through the rear airduct over the top of the cooling units. The two fans in the return airduct have a capacity of 500 cu. ft. per min.

Each bank of cooling units was baffled from side to side in the plenum chamber so that all air was forced directly over the cooling units.

In the original installation of this equipment one thermostatic expansion valve each was installed with each condensing unit and supplied refrigerant to the two flooded evaporators with each unit.

In the initial pull-down tests conducted a difficulty was encountered in securing temperatures below -20° F. This was due to the fact that with the thermostatic expansion valves that were used the power element would close the valve at a suction temperature at the evaporator outlet corresponding to a -20° F. room ambient. When the valves closed the suction pressure would fall off rapidly and no more refrigeration was produced.

Tests were conducted to improve this condition by placing a small heating unit adjacent to the bulb of the power element in each valve. These heaters were in the order of 150 watts. By the addition of these heaters the valves would remain open and would permit sufficient refrigerant for the obtaining of room temperatures below -40° F.

2 VALVES IN PARALLEL

After these initial tests were conducted automatic expansion valves were immediately installed in parallel with each thermostatic valve in each system. By this combination the thermostatic valve would handle the load requirements during the initial phase of pull down conditions when the load was heaviest. The automatic valves were then set at approximately 15 in. Hg. vacuum and would then carry the load after the initial phase of the pull-down was completed.

As described previously this room has been used in testing many types of government war products under various temperature and load conditions. In many cases these products are tested under no load except for the sensible heat load of the equipment being tested and these low

temperature requirements are merely for the purpose of checking the equipment under test for operation after it has been lowered in temperature to the required test specifications.

In other cases, particularly government radio equipment, it is necessary that the equipment be operating continually during the pull-down condition and that readings on the equipment being tested are made continuously during the pull-down and after the equipment has reached a temperature corresponding to its best specification requirements. These conditions are also true in the high temperature requirements.

PULLDOWN FAST AT FIRST

In a study of the operating characteristics of this installation during a pull-down run of from 75° F. in the room to -60° F. it was noted that the pull-down is reasonably rapid at the start of the test. In the first hour the temperature was reduced from 75° F. to -6° F. After two hours operation the temperature was reduced to -20° F. with an operating suction pressure of 16 1/2 in. Hg., corresponding to an evaporator temperature of -70°.

After four hours operating the temperature had reduced to -41° F. at approximately the same suction pressure and evaporator temperature. At this stage of the pull-down the automatic expansion valves only were supplying refrigerant to the evaporator at approximately constant suction pressure and temperature.

-60° F. IN 20 HOURS

At the end of 20 hours of operation the temperature had reduced to -60° F. which was the lowest tem-

perature reached with this installation. This test was conducted on a unit manufactured for the U. S. Army Signal Corps. This unit was not required to operate during this pull-down but was checked for complete operation when the unit reached a saturation temperature of -40° F.

Dawson Gives Formula For Valve Sizing

R. S. Dawson, vice president of Alco Valve Co., in commenting on Mr. Craig's talk pointed out that a simple formula had been developed for sizing valves for "F-22" applications.

Valves for the "F-22" jobs should be sized at 1.2 the size of a "Freon-12" valve that would be used on such an application, Mr. Dawson said.

This commentator also declared that use of a flooded evaporator in an "F-22" system developed two weak points: (1) oil logging, and (2) an increase in the static head pressure in the evaporator.

Mr. Dawson explained that in some sub low temperature systems it was the practice to use two expansion valves as the refrigerant flow control medium. One valve with a high super-heat characteristic was used for the "pull-down" period, and the other valve was used to operate within the desired operating range.

Warning on Oils Is Given by Thompson

R. J. Thompson of Kinetic Chemicals, Inc., told the A.S.R.E. technical session that while "F-22" and the compressor lubricant are miscible in

the high side, that a two-layer formation of oil and the refrigerant often happens in the evaporator.

The extent of this two-layer formation is determined by the viscosity of the oil and the amount of oil that "goes over" into the evaporator, he declared. "Wax separation of the oil, often a cause of trouble in refrigeration systems, varies with the temperature and amount of oil in the mixture.

Mr. Thompson suggested a three-point solution for this problem:

(1) Use oil with as low a viscosity as possible.

(2) Use an oil that has been dewaxed or degummed at the lowest possible temperature.

(3) Install an oil separator between the condenser and compressor as close to the cylinder head as possible.

It was pointed out by Mr. Thompson that the refrigerant "F-22" is not a substitute for "Freon-12" and should be used only in applications in which the back pressures are such as to create other conditions which standard designs of compressors are not capable of handling.



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needed by our armed forces. And theirs will be the task of helping us swing back to the production of Norge household appliances after the war. Meanwhile they are working for today and planning for tomorrow. And Norge dealers will like the products of experience these men will have for them soon after we get the "go-ahead" signal.

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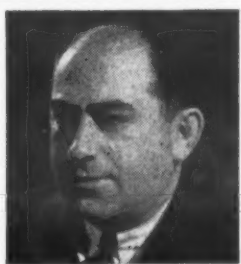
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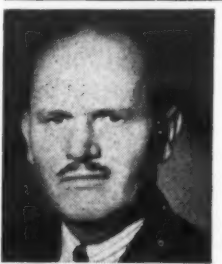
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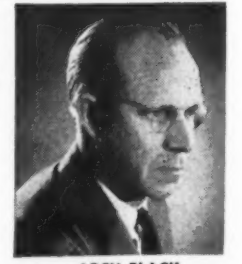


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Published Every Monday by
BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.
Telephone Columbia 4242

Subscription Rates
U. S. and Possessions, Canada, and all countries
in the Pan-American Postal Union: \$4.00 per year;
2 years for \$7.00. All other foreign countries: \$6.00
per year. Single copy price, 20 cents. Ten or
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VOLUME 41, No. 3, SERIAL No. 774
JANUARY 17, 1944

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When Will We Get More Refrigerators For Civilians?

ON previous occasions this publication has suggested that no new production of household mechanical refrigerators could be expected before the third quarter of 1944. We have thought that production of commercial refrigeration for civilian use might be hoped for in the second quarter of the new year.

It now appears as if our second guess is close to the mark; whereas the guess on resumption of household mechanical refrigeration is possibly a trifle optimistic. This we say now despite the fact that nearly everybody else assumes that by midsummer most former makers of household refrigerators will be back doing business at the old stand.

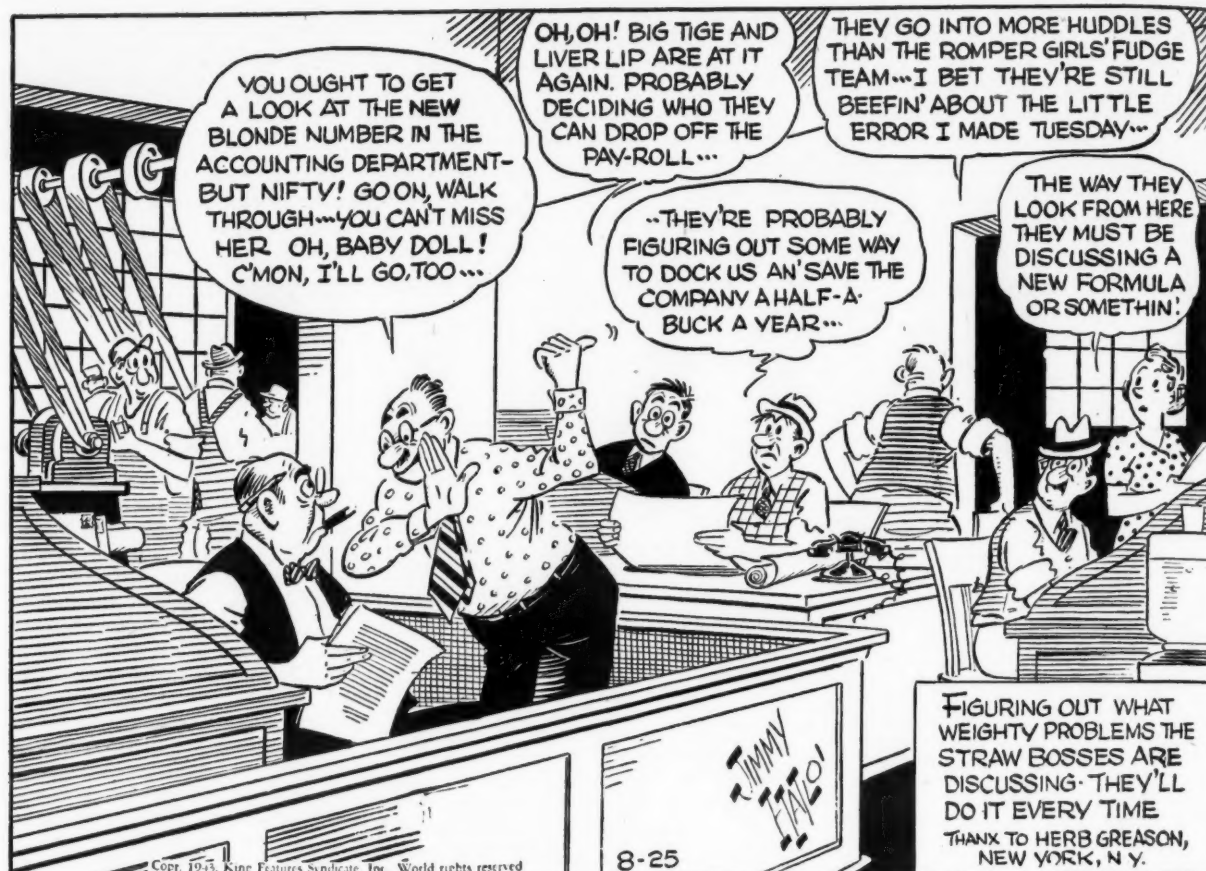
WHEN THE WAR TIDE TURNED, OCR WENT INTO ACTION

In the waning months of last summer it began to become apparent that the war tide had turned in favor of the United Nations. It was also about that time that the first rumors began to hit Washington of a highly favorable "negotiated peace" with responsible elements in Germany.

Hence the Office of Civilian Requirements, acutely conscious of the nation's pressing need for more refrigerators and refrigeration equipment, began to press for recognition of the early necessity to resume production on these items. Manufacturers were quietly sounded out on their comparative readiness and ability to reconvert; the military authorities were acquainted with the need; the slow-moving wheels of governmental action were grindingly started in motion.

So, a most capable Industry Task Committee prepared a voluminous, thoroughly documented report to the General Industrial Equipment Division of the War Production Board on the

They'll Do It Every Time By Jimmy Hatlo



needs for commercial refrigeration equipment. Concurrently, a committee from the household refrigeration industry voluntarily drew up an admirable report on ways and means of their getting back into production for civilian use on a basis which would support the best interests of the public and the war effort.

REPORTS WON ACCLAIM FROM THE WPB

Both reports have privately received high praise from within WPB. Arthur Whiteside and his executive aides in the Office of Civilian Requirements are said to believe that the suggested procedure for the resumption of household refrigerator manufacture for civilians is a model which might well be followed by other consumers durable goods industries.

So, what's the pitch?

Well, two new considerations have bobbed up, each of which will have the effect of delaying the production of refrigeration equipment for civilian use (particularly household refrigerators) despite the fact that materials and manpower for such production are now available.

PRODUCTION POSTPONED BY WAVE OF STRIKES

These two new elements in the hectic picture are:

(1) *Strikes.* John L. Lewis and his coal mine strike set the pattern; the railroad unions have confirmed it. The word has gone out that if you get tough, the President will give you more than you ask for in terms of take-home pay. The word has also gone out that—with victory in sight—now is the last time to raise hourly and average earnings in industry. In other words, the big grab is on for the unions. They will strike, or threaten to strike, in increasing crescendo during the first quarter of 1944.

STRIKES MAY REDUCE SURPLUSES OF MATERIALS

In this connection, the Army and Navy wisely note how the coal strikes cut into production in 1943. They expect steel strikes, aluminum strikes, automotive industry strikes, all kinds of other strikes which could easily cut present surpluses into deficits.

Therefore, they tend to reverse their tendency of three months ago. Then

they were worried about future Congressional investigations into unused surpluses of raw materials, semi-finished and finished war goods. Now they worry about strikes. And they want to stockpile against the possibility of strikes.

(2) *The second front.* We are now committed to the frightful task of invading Hitler's super-fortified Europe. Nobody knows how it will turn out; nobody will even venture to guess, except in the most horribly pessimistic tones. Publicly, the military planners refuse to think in terms of other than the Dieppe Raid ratio of casualties. They point out further that the Dieppe Raid did not establish a permanent beach-head.

WHY DO MILITARY AUTHORITIES DELAY RECONVERSION?

All previous experience on amphibious warfare has demonstrated the Certainty of the Imponderables (in two-bit language: you don't know what to expect). Invariably sharp changes in the demand for various types of fighting tools develop out of an amphibious invasion. So, the military and naval services are justifiably smart in making certain that plenty of productive facilities be available for unforeseen needs.

Shipbuilding is a case in point. Even the most pessimistic of the Army logicians and statisticians admit that we're far ahead of schedule. Partly this is due to better utilization of man-hours in the shipyards. Even more it is due to the Navy's marvelous job of minimizing the submarine menace.

There is every reason to believe that it would be sane to cut back the Liberty ship program sharply and at once. Yet the Services won't hear of it. They simply don't know what might be required in the forthcoming Invasion of Europe.

It all adds up to this: the Services can't afford to take chances. If things turn out according to plan, we'll have a surplus of shipping, of arms, and of men. We'll have unemployment. We'll have a bad time lag in the resumption of production of necessary civilian durable goods, such as refrigerators. But that's a chance we'll have to take.

The next 90 days may turn out to be the most crucial three-month period in the history of civilization. Let's all pray for the success of our armed forces during that ultra-critical time!

LETTERS

HOW DO YOU INTERPRET 'FREON' ORDER M-28?

Electric Power Board of Chattanooga
N. W. Cor. 6th and Cherry Sts.
Chattanooga, Tenn.

Editor:

We were very much interested in your front page editorial on the M-28 order in your Dec. 20 issue.

Do you have an interpretation which would allow service men to put 10 pounds of F-12 into a system which requires 30 in view of the Paragraph (b) 2 (V) which reads *Systems for which no deliveries are permitted, where the total operating charge required to operate the system is ten (10) pounds or less of F-12 gas and the system was in operation on Nov. 12, 1943, and is used for food preservation or for storage of penicillin, blood serum, blood for plasma, blood plasma, biologicals and bacteriologicals.*

It has been our interpretation that this prohibited us from adding any Freon at all for systems requiring over 10 pounds full charge. If the interpretation has been more liberal than this, we would be very much interested as it would help out in a number of cases. We would appreciate your reaction on this situation as our appliance repair department wants to keep every refrigeration system going but we cannot jeopardize the F-12 supply to domestic (less than 10 lb.) users by taking a chance on large jobs.

W. G. DAVIES,
Sales Manager (Acting)

'SOMETHING SHOULD BE DONE ABOUT GUARANTEES'

Willis Appliance Co.
417 17th St., Merced, Calif.

Editor:

We have just read Mr. H. W. Gluff's interesting letter in the Dec. 20 issue, and agree that something should be done about guarantees, not only on refrigeration, but other appliances as well.

Long guarantees were introduced at a time when the public had little confidence in the ability of appliances to hold up, and were used as a sales argument. This is certainly no longer true, and should be discontinued.

We understand that when civilian production is again started, there will be a concerted effort to reduce selling prices, and dealers' margins. This is certainly right and proper, but also the dealer should be relieved of the useless and unnecessary service expense with which he has been saddled.

Not only are long guarantees expensive to maintain, but they also make it difficult to run a profitable repair department. We have even had owners refuse to complete payments until a service man had made a free call, even though nothing was wrong. They thought they were entitled to free service, and were going to get it whether they needed it or not.

We would like to see a 90-day guarantee on all appliances, with 30 days free labor, and in the case of refrigerators, an additional nine months warranty on the sealed-in unit.

C. A. WILLIS

Broad Schedule For New Civilian Goods Outlined By OCR

WASHINGTON, D.C.—While there will be little if any increase during the first quarter of 1944 in the production of civilian goods, the Office of Civilian Requirements and the War Production Board have announced a broad schedule for production during the year.

To prevent anyone from drawing over-optimistic conclusions from size and extent of the complete schedule, OCR officials warn that the schedule was made sufficiently large and flexible to take immediate advantage of any unexpected increase in manpower and materials which may occur during the year.

About 86 "hard" and "soft" civilian items, twice as many as are being manufactured today, are included in the production schedule, which is outlined as follows:

Electric Lamp Bulbs and Tubes—Increase in production.

Electric Heating and Cooking Appliances—Probably 88,000 electric ranges, small radiant and spot heaters for use in areas where fuel is short, and probably other items to be added.

Other Electrical Appliances—Washing machines, electric irons, and portable lamps.

Dry Cell Batteries—Production increase planned.

Domestic Ice Refrigerators—Program previously announced.

Portable Electric Lanterns, Incandescent—Some scheduled.

Lamp and Lanterns, Liquid Fuel—Production increase planned, chiefly for farm use.

Bedsprings—More to be made. More innerspring mattresses to be scheduled.

Food Preparation and Serving Fixtures, Equipment, Appliances (Commercial)—Essential items to be made.

Cutlery—More to be made.

Silverware, Plated—"V" specifications may be eliminated.

Clocks and Watches—More to be made. Quantity in doubt.

Additional items scheduled include plumbing sanitary ware; commercial dishwashing and glass washing machines; fabricated wire products; insect metal screen cloth; fiber, steel, and wire brushes; cut nails made from tack plate; wire shoe nails; non-ferrous nails and tacks, except thumb tacks; repair parts; canvas baskets, and hampers.

Radio Equipment—Schedule includes electronic tubes, fixed capacitors and condensers, microphones, speakers, resistors, and electronic vibrators.

A recent survey of consumers by the OCR revealed heavy demand for certain articles, production of which is scheduled as follows:

Wash Tubs—Material allocated for production.

Electric Irons—Announced program of 2,000,000 not expected to be increased.

Flashlight Batteries—More for civilians expected.

Table Ware—Production authorized for certain utility knives, forks, and spoons. Will be increased.

Pots and Pans (Under 10 Quarts)—Increase in production planned.
Iron Cords—Replacement cords for all appliances will be available this year.

Pot Scourers, Including Steel Wool—New steel instead of scrap being allocated.

Alarm Clocks—Simplified "Victory" model scheduled, but production facilities are quite limited.

Washing Machines—No output until second or third quarter of 1944 due to shortage of small motors.

Clothespins—Price ceilings being adjusted to encourage manufacture.

Radio Tubes—Production of 4,500,000 household tubes planned.

Wire Fencing—Production schedule increased, and Army is being asked to release some of its huge stocks.

Scissors—Apparently production is being scheduled.

OPA Changes Stove Order 9A To Clarify Definitions of 'Dealer,' 'Manufacturer'

WASHINGTON, D. C.—Stove Ration Order 9A has been amended by the Office of Price Administration to change the definitions of the terms "dealer establishments," "manufacturing establishment," and "manufacturer."

Section 3.1 (a), which defines "dealer establishment," has been revised to read as follows (bold type indicates changes):

"Any place other than a 'manufacturing establishment,' there a 'person' regularly 'acquires' and 'transfers' 'stoves covered by this order,' is a 'dealer establishment' if the sales

or other transfers from there are made primarily to 'consumers.' Such a place is a 'distributor establishment' if the sales or other transfers from there are made primarily to persons other than consumers or primarily to supply one's own establishments. However, if such a place is used by a person to keep stoves just to supply his own establishments, that place is a distributor establishment only if it supplies:

"(1) At least two of his own distributor establishments, or

"(2) At least three of his own dealer establishments."

Section 4.1, defining "manufacturing establishment" and "manufacturer," now reads:

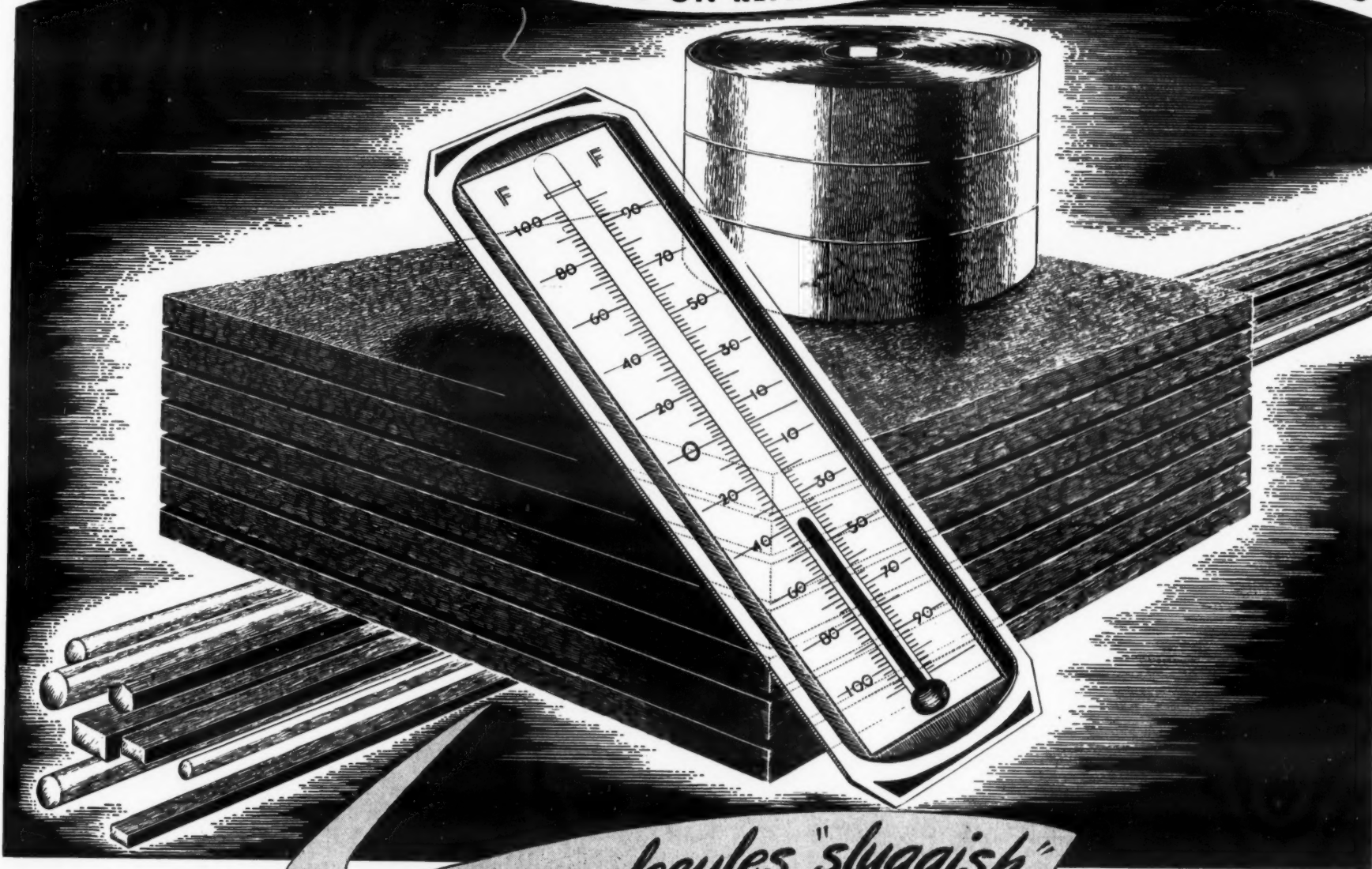
"(a) Any place where a 'person' makes or assembles any 'stoves covered by this order' for sale or 'transfer' is, as to those stoves, a manufacturing establishment. Any other place where a person gets stoves from his manufacturing establishment for sale or transfer primarily to persons other than consumers is, as to those stoves, a part of that manufacturing establishment.

"(b) Any person who has a manufacturing establishment is called a manufacturer."

Revisions to include the amended definitions were also made in Section 13.1 (a) paragraphs 7, 9, and 13.

The amendment, which was issued by OPA on Jan. 6, was to go into effect on Jan. 11, it was announced.

MEN, INDUSTRIES AND NATIONS DEPEND ON REFRIGERATION ACCURATELY CONTROLLED



IT'S difficult for the uninitiated to regard a sheet of metal as anything but a hard, static, inert weight — not the living, molecular structure, the activity of which the metallurgist must learn to control. Retarding this molecular activity is often necessary, that metal may be worked, bent, formed, riveted before "aging" makes it too hard. Modern refrigeration is a ready servant for the metallurgist here, doing duty in many different ways, at a wide variety of low temperatures, depending on the character and the use of the metal.

Industrial refrigeration, serving the precision requirements of production

today, demands the extremes in accurate control. It's one of the many tasks so well suited to A-P DEPENDABLE REFRIGERANT VALVES, whose reputation for accurate, super-sensitive refrigerant control has been built on successful operation of all types of refrigeration today.

There's promise here for greater progress in years to come... new applications for mechanical refrigeration now on the drawing boards of many post-war planners. The A-P research staff will have a hand in this fu-

ture development. They invite you to use their knowledge and facilities to bring YOUR future plans to perfection.

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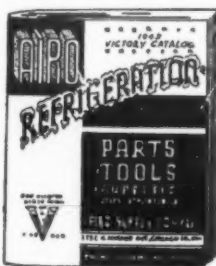


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WHO isn't these days? BUT since WFB has given us clearance to place orders and since manufacturers' deliveries of merchandise are steadily improving, it stands to reason that "BO" is going to be less and less troublesome to AIRO customers—and soon! Hence this suggestion: better get our current Victory Catalog and place your orders as soon as possible. You know, "First come, first served."



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Refrigeration Parts and Equipment

Extension of Food Freezing Likely Postwar; 'Complete Meal' Freezing Offers Problems

PHILADELPHIA—Great possibilities for an extension of the refrigeration and freezing of foods on farms, but many problems in the preparation of quick-frozen "completely cooked" meals for city dwellers are seen by Gerald A. Fitzgerald, technical director, Richardson & Robbins Co., who addressed the American Society of Refrigerating Engineers at its convention here last month on "Trends in the Refrigeration of Foods."

"It is now common knowledge that fresh vegetables shipped into our great eastern markets from the far west are of better eating quality and more nutritious than similar locally produced vegetables, generally speaking," said Mr. Fitzgerald. "The speaker presented the above fact in your journal in 1934. Today, the same condition exists. The farmer cannot do anything about it alone."

"The refrigeration industry has the responsibility of providing him with tools so that refrigeration will serve the farmer in other ways besides quick freezing."

"The speaker in his 1939-40 'Data Book' article described a simple type of cooling which might introduce refrigeration in the handling of perishable produce on the farm. It was shown that the temperature under a wet canvas lying in the sun was about 20° cooler than the air temperature of 68° F. due to surface evaporation."

"Let us consider the next step. Field cooling will not only prevent wilting, but will sell the farmer re-

frigeration as a preservative of quality. He will not allow his beans to wilt between his farm and the five o'clock market next morning after having given them such a good start."

"He will want to install a unit ice maker to make finely crushed ice to cover his beans so that the farm quality will carry right through to Mrs. Consumer's kitchen just as surely as though he had quick frozen those beans."

"Here is a development that is too big for an individual manufacturer. The industry will have to underwrite such a development if it considers the idea sound. The wholesaler and retailer naturally take better care of iced produce. Reicing is now practiced on shipped in merchandise. I would not be surprised to see a big market developed both in walk-in boxes and display cabinets for fresh farm produce once the farmer does a better job."

REFRIGERATION ON THE FARM—FROZEN PRODUCE

The war has given farm freezing of foods tremendous impetus, Mr. Fitzgerald pointed out. Scarcity of tin containers and pressure cookers and rumors of scarcity of glass containers on the one hand and apparent adequate supplies of farm freezers and packaging supplies on the other, has provided the impetus.

Many farm housewives will never return to canning because the freezing is applicable to so many more products. Besides the difficult vege-

tables such as broccoli, cauliflower, and brussels sprouts, freezing also can be applied to such things as pies, cakes, eggs, cream, butter, cheese, and many other farm products. Now that this knowledge has come, the farm freezer has become a farm fixture.

The freezing and storage of meat, poultry, fruits, and vegetables on the farm is much more convenient than in locker plants, to Mr. Fitzgerald's way of thinking. However, when such freezers are large enough to care for peak loads they are very expensive.

For this reason, even though a farm freezer may be used, there is usually a locker or more to receive the overflow. In spite of severe restrictions on equipment, the manufacture and use of farm freezers has steadily increased during the war. They have been responsible for preserving unknown millions of pounds of farm produce during these critical times.

At present point values and ceiling prices frozen foods are not moving fast enough to justify much expansion. Warehouses all over the country have their low temperature rooms congested with 1943 stocks.

In fact ice companies are being prevailed upon to store bulk products such as barreled fruits at plus 10° F. Where they have space that can be brought down to this temperature. Priorities will undoubtedly be granted to convert some ice plants to low temperature storages.

FROZEN COOKED FOODS

Frozen cooked foods are a definite possibility after the war, the speaker stated, earlier obstacles having been largely eliminated. Airline and delicatessen demands will justify a sizable industry between them.

However, the production of cooked

foods may present many more headaches than their frozen raw counterparts. Cooked fats having been found less stable than raw fats, wise selection of the more stable fats accompanied by certain antioxidants will greatly extend the storage life of frozen cooked meats.

Cooked foods are also more susceptible to bacterial spoilage than raw foods because they are already partly pre-digested. This makes their commercial production a real undertaking. They must be handled as aseptically as possible to prevent contamination and incubation at the optimum temperatures which usually exist during cooling.

Thus the greatest sanitary precautions imaginable and the most efficient cooling systems obtainable are required. Frozen cooked products can be handled so that they will stand up as well as their frozen raw counterparts in the defrosted state under refrigeration. They should not be allowed to remain at room temperature except during a short defrosting period.

Cooked meats with gravies will probably present fewer difficulties. Hitherto they not only became rancid but also curdled due to the breaking of the emulsion by freezing.

Although fair results have been obtained with certain natural-gum stabilizers such as Lakoe A, recently the use of certain pectin derivatives, in themselves not affected by the cooking nor by the freezing processes have been claimed to give good stability to gravies.

Frozen cooked foods have been expanding steadily both in volume of production and number of products. Although the packing of meats in gravy may be postponed for the duration, the following largely unrationed items are making a hit: (1) chicken a la king (2) chili con carne (3) baked beans (4) lima beans and hash (5) beef hash (6) corned beef hash (7) clam chowder (8) vegetable soup (9) green split pea soup (10) navy bean soup and (11) spaghetti dinner. Shortages are bound to bring out other new items.

The packing industry is boning out billions of pounds of meat for the Army. It is not such a far cry to the preparation of civilian cuts either of retail size or such that the retailer may divide, the speaker averred.

To show that such an innovation may be close to realization, one of the large packers recently received a patent on a method of freezing

muscle-separated meats in which carcasses are cut up in such a way that all muscles of uniform tenderness may be packed together.

Too little cognizance has been taken of the scientific evidence that certain fish must be frozen at sea in order to fresh food. Without too much effort be comparable in quality with other a refrigerating and freezing plant might be designed for existing fishing craft. Scientists have proved that the freezing process inhibits all deterioration while holding at 32° F. in ice does not.

The fish would no longer have to be gutted at sea but could be frozen and stored in the round and manufactured when desirable.

"The present trend toward package cheapening deserves a warning," the speaker asserted.

"Wrappers of the best possible moisture-vapor resistance are still important for meat and fish products. Any wrapper that will limit the weight loss from one pound of ham-burgh at -10° F. to 1% in six months is considered satisfactory."

"Generally when price competition results in cheapening the protection of frozen foods, one brings up the question of why not humidify freezer storages so that frozen foods packers may use cheaper packages without fear of loss from desiccation."

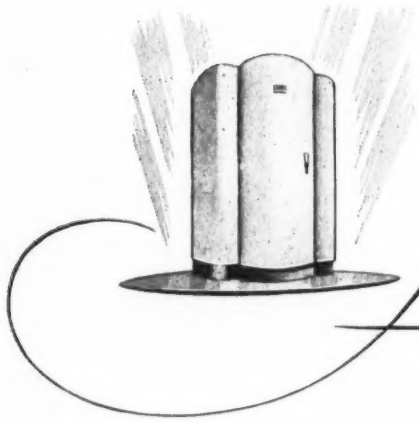
"In fact, many wise operators will be advertising just such a story to the frozen foods industry. About 96-97% humidity in the storage would prevent desiccation practically without any packaging protection around the product."

"This may be a little high treatment for practical purposes, but a 95% humidity appears to be practical. The importance of humidity in cold storages has not received sufficient attention and poor storages do much damage in spite of the very best package protection."

"In a certain cold storage plant which was converted to handle frozen foods by installing a unit cooler (floor model) as a booster, about 15 gallons of water was removed daily from the air."

"After a period of three months the situation was discovered and analyses showed that a 1% weight loss had occurred in the products stored. This amounted to 10,000 pounds on the million pounds which were valued at 20 cents per pound."

"Perhaps the frozen foods manufacturer could afford to pay handsomely for humidified storage space."



*How much Plastic Material
will there be in Your -*

AFTER-THE-WAR REFRIGERATOR?

IN THE new refrigerator models now under development more plastic material than ever before will be used.

That is natural, because the industry had a satisfactory experience with many plastic parts on before-the-war refrigerators. Breaker strips, inside door panels, and many other parts improved the insulation of the box, provided a non-porous surface with a lasting finish, that would not chip or crack easily under impact.

Refrigerator engineers liked the material and were making big plans to increase its use when the war stopped production.

Now that they are free to make new plans again many of them are coming to Formica for breaker strips, formed pieces for door backs, and panels in color. Let our engineers tell you of the new possibilities war research has developed.

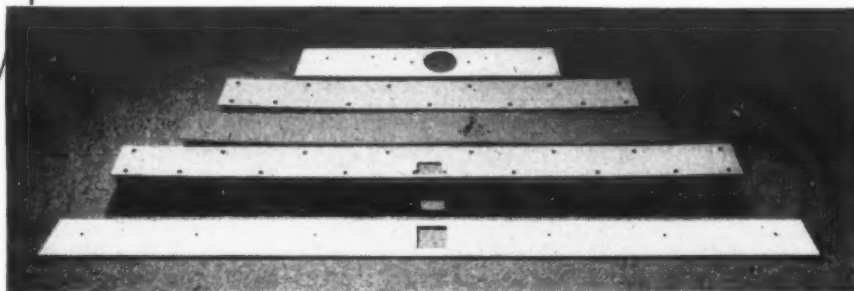
"The Formica Story" is a sound moving picture showing the qualities of Formica, how it is made, how it is used. It is available for meetings of designers and executives.

THE FORMICA INSULATION COMPANY
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FORMICA Breaker Strips

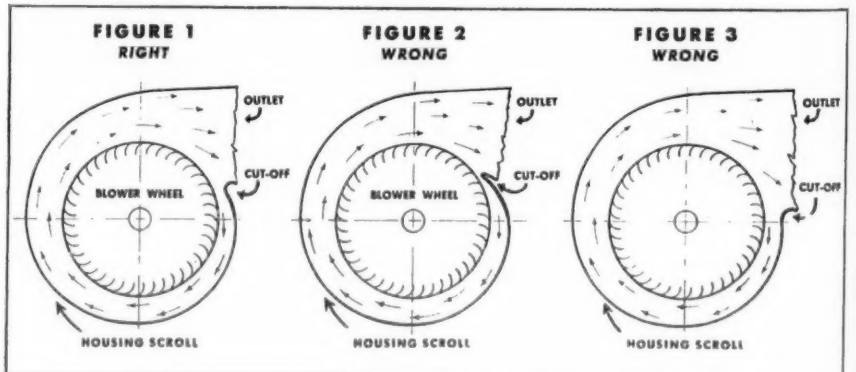
These smooth, permanently flat edgings for refrigerator doors are available in black, white or other colors. The material may be bought in sheets and machined by the refrigerator manufacturer or may be shipped ready for assembly. The base stock is odorless. Resistance to wear preserves their original appearance for the lifetime of the box. Resistance to moisture absorption keeps them flat and provides a perfect seal when the door is closed.

FORMICA



Tips for Designing Air Impelling Units

No. 4 of a series



The Blower Wheel Housing Cut-Off

THE function of the cut-off is to divert the air stream to the housing outlet and to prevent it from being re-circulated through the housing. The shape of the cut-off, the distance it projects into the outlet and its proximity to the blower wheel require careful consideration.

Figure 1. A correctly designed cut-off. Properly rounded and properly spaced in relation to the wheel and housing outlet.

Figure 2. Wrong. Shows too sharp a cut-off, too close to the wheel. This will produce excessive noise.

Figure 3. Wrong. Cut-off barely projects into the outlet. Air flows freely, but decreased pressure tends to create pulsations in the air stream.

A correctly designed cut-off is but one of a number of important factors that will affect the performance of a blower wheel.

By consulting the Torrington Research Laboratory, preferably during the early design stages of products using air impellers, costly changes and delays may be prevented. This free consulting service incurs no obligation.

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Army Refrigeration Problems

By P. B. Reed

Electric Refrigeration and Air Conditioning Division, Servel, Inc.

Charging Refrigerant Into the System

In these days of shortages of men and material, when almost every service engineer has much more to do than he can possibly accomplish, we are even more than ever inclined to take "short cuts" to save valuable time. The danger in using abbreviated methods is that they may "rob Peter to pay Paul,"—they may actually waste time in the long run.

If we are not careful we may use the lack of time as an excuse for employing lazy methods and doing sloppy work. If we can really save time by taking a short cut it certainly is well worth while, but if by using the "time-saver" method we do a sloppy job of work that has to be done over, then it has been a "time-waster" method.

One of the methods which are sometimes resorted to in order to save time and work is to add refrigerant to the system in a liquid form instead of in vapor form. Doubtless the refrigerant can be "poured in" in a matter of a few minutes, while to put the refrigerant into the system as a vapor may take from one-half hour to perhaps as much as a couple of hours, and yet this extra time is well spent for it may save a great deal of time, work and expense in cleaning out the system and removing moisture.

When you receive refrigerant direct from the manufacturer you can

feel reasonably safe that the cylinder is clean and that the refrigerant is dry, but if the refrigerant has been transferred from the original factory cylinder to a service cylinder it may have some scale and dirt in it and is very likely to have some moisture in it.

SERVICE CYLINDERS SOMETIMES HAVE DIRT OR MOISTURE IN THEM

Service cylinders are sometimes left open allowing moisture to enter. They are frequently used to receive refrigerant drawn out of a system and there may be dirt, oil and/or moisture in the withdrawn refrigerant. Moisture attacks the cylinder itself and scale forms.

If refrigerant is poured from the service cylinder into the system, the dirt, scale, oil and moisture goes with it. If the refrigerant is vaporized in the service cylinder and passed into the system in vapor form, the dirt, scale, oil and moisture are left in the service cylinder.

When the refrigerant is being vaporized it is being fed into the suction service valve on the compressor at a suction pressure of from about 15 to 40 lbs./sq. in. corresponding to approximate boiling temperatures of from 10° F. to 43° F. "Freon-12," and from 21° F. to 53° F. methyl-chloride. For moisture to vaporize at pressures of from 15 to 40 p.s.i. the temperature would have to be from 250° F. to 275° F. Therefore, the moisture remains in liquid form and stays in the cylinder.

To withdraw refrigerant from the cylinder in vapor form it is necessary to convert the liquid refrigerant into vapor; to vaporize it, boil it, which is the same thing that goes on in the evaporator in the refrigerating system. To cause the liquid to boil or vaporize it must be supplied heat; otherwise it will get colder and colder and the pressure will keep going lower and the amount of vapor boiled off will become less and less. So that, to keep the vapor flowing to the compressor in good volume and at a pressure of from 15 to 40 p.s.i., heat must be applied to the cylinder.

USE WARM WATER TO KEEP THE CYLINDER FROM GETTING COLD

This heat must not be too intense and it must be evenly distributed over the cylinder, so the best way to heat the cylinder is to set it in a tub or pail of warm water. The water should be at a temperature of from 70° F. to 110° F.

If the water is cool, it will not vaporize the refrigerant rapidly and the amount of vapor supplied to the compressor will slow down. If the water is too hot the refrigerant will be vaporized too rapidly for the compressor to take away and the suction pressure will rise to overload the motor.

The suction pressure at which refrigerant vapor may be fed to the compressor will depend upon the type of condensing unit, that is, the evaporator temperature for which the motor is loaded. Units for air conditioning are designed for suction pressures of about 35 to 40 p.s.i. "Freon-12" (for methyl chloride 25 to 30 p.s.i.). The motors on units for ice cream cabinets are loaded for suction pressures of about 7 to 10 p.s.i. "Freon-12" (2 to 4 p.s.i. with methyl chloride).

The pressure of the refrigerant vapor from the cylinder may be regulated within sufficient limits by controlling the temperature of the water in which the cylinder is placed by adding hot water to increase the pressure or if the pressure is too high by temporarily removing the cylinder from the water.

NEVER PUT A BLOW TORCH ON A REFRIGERANT CYLINDER

Never turn a blaze, such as from a blow torch, directly on a refrigerant cylinder. In the first place it is dangerous, and secondly, because of

the small area of the cylinder heated, it isn't of much help; hot water is much faster.

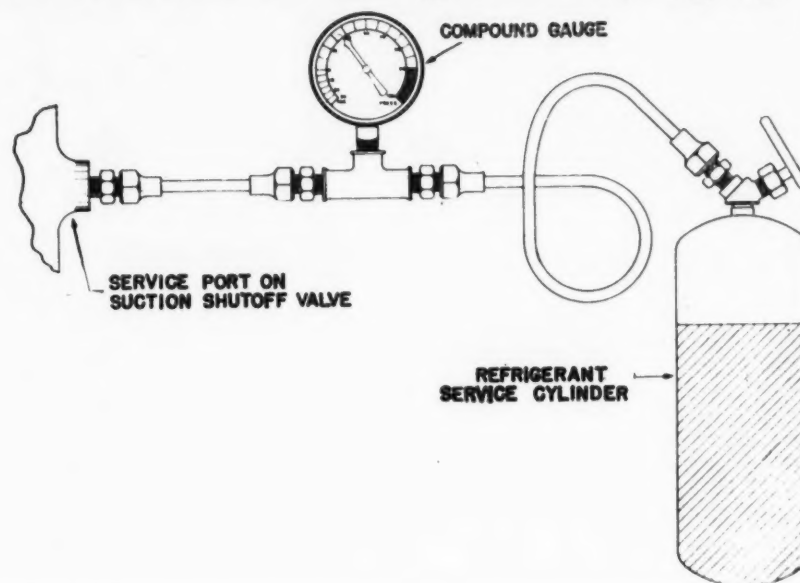
Cases have been known where men have been badly hurt by refrigerant cylinders bursting from over-heating. Hot water, at the temperatures shown above, will not cause excessive pressures that the cylinder will not stand.

The practice of putting refrigerant into the system in vapor form is entirely practical for either adding refrigerant to or completely charging ordinary systems using condensing units up to 10 hp. or even larger. It does not take much time to vaporize 50 or 100 pounds of "Freon-12" or methyl chloride and you will be amply repaid in assurance that you are not contaminating a clean system with dirt and scale nor introducing moisture that will cause expansion valve and other trouble.

To completely charge a large system requiring several hundred pounds of refrigerant will involve what might well be an excessive amount of time if the refrigerant were put in as a vapor but certain definite precautions must be taken if troubles are to be avoided when putting in refrigerant in liquid form:

1. If it is decided to put the re-

Connections In Refrigerant Charging



frigerant into the system as a liquid it will usually be found practicable to pour it directly into the receiver through one of the service valves or a charging valve. The liquid will flow into the receiver by relieving the pressure in the receiver by purging from the purge cock or inlet service valve (sometimes called the condenser service valve).

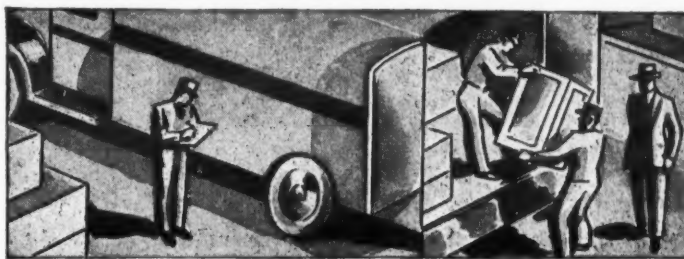
2. Never pour liquid refrigerant into the low pressure side of the system from which it will be drawn into the compressor as a liquid and cause breakage of valves, rods, crankshafts, compressor pulley or otherwise severely damage the compressor.

3. In the charging line from the refrigerant cylinder to the receiver, insert a strainer with a felt pad in it to remove any dirt, scale or other foreign matter that may be in the cylinder.

4. Install a dehydrator of ample size in the liquid line, equipped with an effective strainer to remove any dirt or moisture that may possibly have been inserted along with the refrigerant.

5. Be careful not to overcharge!

Putting refrigerant into a system in liquid form can be done successfully but it involves much more hazard and should not be resorted to, except on large installations.



A REPUTATION FOR SUSTAINED

DELIVERY

Although war time production and restrictions have necessarily made it very difficult to produce and ship goods to our customers at a rate approximating our peace time rate, we have managed to supply our customers with their essential requirements in reasonable time.

This condition does not prevail through mere chance. When the war broke out we made an extensive study of how we could best serve our customers within existing regulations. This, together with the fact that we are not dependent upon outside sources, but manufacture and control all the parts and operations of our products from the virgin metal to the finished goods, is largely responsible for our favorable position today. WE HAVE A REPUTATION FOR SUSTAINED DELIVERY.

Mueller Brass Co. refrigeration products are in use with our armed forces on practically every front. They are incorporated in units produced by other manufacturers who depend upon us for prompt service and quality products.

Service engineers can place full confidence in Mueller Brass Co. Valves and Fittings. Rigid laboratory control, skilled engineering, highest quality materials, precision workmanship and rigid inspection combine to make our products constantly dependable.

VALVES • FITTINGS • ACCESSORIES FOR REFRIGERATION AND AIR CONDITIONING

MUELLER
BRASS CO.
PORT HURON, MICH.

WAR INDUSTRIES NEED REFRIGERATION

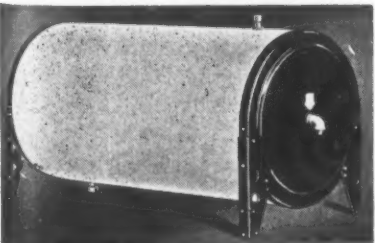
The use of refrigeration in industry has been greatly accelerated by the war. In peacetime this expansion may logically be expected to continue. Write for literature.

GENERAL REFRIGERATION DIVISION

Yates
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"DAY & NIGHT" STORAGE TYPE TANKS SAVE SPACE



Compact "Day & Night" Storage Units, such as the Model CE-25 shown above, may be installed any place . . . on walls or ceilings . . . or integral with condensing unit . . . wherever cold water is required for drinking, jacket cooling, photographic processes, cooling welding tips, etc. A modern Scuttlebutt for shipboard use. Supplied on storage capacities from 6 to 100 gallons.

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Eastern refrigerator manufacturer desires the services of a refrigerating engineer—a man qualified to act as assistant to Chief Engineer. Outstanding opportunity—permanent position—good salary. Also interested in the services of a draftsman with background of refrigeration experience. Box 222 Equity, 113 W. 42nd St., New York.

FLOOR TYPE
UNIT COOLERS

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Refrigerators

KRAMER TRENTON & Co.
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What the Postwar Buyer Is Looking For In Refrigerators and Other Appliances

NEW YORK CITY—Combining figures cited in two articles that appeared last month in the "Wall Street Journal," drawn from a series of surveys run by the U. S. Chamber of Commerce, by private institutions, and by manufacturers themselves, present an interesting estimate on (1) the expressed preferences of people constituting the postwar appliance market, and (2) what they reasonably can look forward to in the way of refrigerators after the war.

Leading the field of preferences are those appliances that have become least available during the past two

years—mechanical refrigerators, electric ranges, fully automatic washers, automatic garbage disposal units, summer air conditioning units for individual rooms, and the like.

Three out of every four people surveyed looked forward to table-top ranges rather than a high-oven type, and two of every three now cooking with gas hoped to switch to electricity when that can be done again. The estimated number of American families now owning electric ranges was 5%.

Three out of four wanted temperature-control devices for individual rooms, and two out of three would invest in full air conditioning if it could cost less than \$200 a room. One out of two would like air-moistening equipment for wintertime use.

REFRIGERATOR NOTIONS

Two out of three expressed a preference for a refrigerator with revolving shelves and a frozen food compartment large enough for a week's supply. The majority of manufacturers, however, have indicated that they will stick to rectangular lines, following established building design of right-angled rooms.

Less demand was voiced for frozen food storage cabinets, or combination quick-freezing and storage cabinets in the home, the implied preference running toward commercial frozen food lockers or the buying of

frozen foods already processed.

Two out of three housewives wanted fully automatic washers, a machine that will wash the clothes, rinse them, dry them, empty them into a waiting basket, and then shut itself off. Spin-drying rather than wringing will be the preferred method.

SIZE OF KITCHENS

The majority looked forward to medium-sized rather than big kitchens, perhaps 9 x 12 ft. in area and following the step-saving U pattern so widely advocated in modern kitchen planning.

The first of the new appliances to appear after armistice has been granted, it was acknowledged, would be new editions of the same models that were the last to come off the assembly lines before this country went into total military production.

Most of the survey experts also agreed that the immediate market will be tremendous, that it will be consistent throughout all parts of the country, and that it will be equipped with hard cash. Any manufacturers waiting long enough to drag out something new and surprising would be left in a cloud of dust.

Within six months, however, they anticipated the appearance of refrigerators with such moderate improvements as freezing compartments equipped to preserve the fruits and vegetables grown in a family's victory garden. It was taken for granted, you will notice, that the practical and recreational appeals of home gardening will retain one wartime measure as a thriving peacetime activity.

Those that do not have freezing compartments as such will have at least special bins to contain the frozen foods that already are established items at grocers and delicatessens.

Other anticipated improvements are more compact refrigerating mechanisms, more efficient insulation and thermostatic controls, and the introduction of such new basic materials as stainless steel, aluminum, glass, and plastics.

At Universal Cooler



A. E. KNAPP
Recently appointed works manager of Universal Cooler Corp.

Ontario Locker Group Will Meet Jan. 19-20

TORONTO, Ont. — First annual convention of the Ontario Frosted Food Locker Association will be held at the King Edward Hotel here on Jan. 19 and 20.

Already chosen for discussion are these six topics: "Future of the locker industry," "processing and preparing fruits and vegetables," "processing of smoked meats," "standardization of locker plants," "economy of locker plants," and "home freezer units."

Midwest Jobbers Meet

Jan. 22 in Omaha

OMAHA, Neb. — Midwest Refrigeration Supply Jobbers Association will hold a luncheon meeting at the Fontonelle Hotel here Saturday, Jan. 22 at 12 o'clock noon, announces Secretary-Treasurer J. F. Wickham. Sales representatives are invited.

TODAY'S TASK IS FIRST— but Tomorrow is not Forgotten

Today the energy, the skill, and the facilities of M. & E. are devoted entirely to military production. But the engineering mind soars to tomorrow—plans and dreams better refrigeration. New and better metals—more sensitive controls—finer tolerances—greater stamina—more power. That the day comes soon when these ideas can take concrete form is the hope of all of us.

MERCHANT & EVANS COMPANY
PHILADELPHIA, PENNA. • Plant: LANCASTER, PENNA.

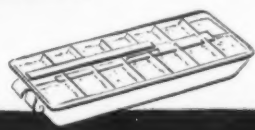


Illustrated is an Inland-made Anti-Aircraft Gun Sight in the process of production.

Fortified with 21 years of Design, Engineering and Manufacturing "know-how" 6,000 Inland men and women, in delivering quantity production of 325 war products and parts, are demonstrating their mastery of many new skills and processes which are helping to speed the day of Victory.

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio

Inland Products for Victory include Carbines, Tank Tracks, Gun Sights, Helmet Liners, Extinguisher Horns, and rubber and metal parts for tanks, aircraft, submarine chasers, torpedo boats, artillery lighters and landing craft.

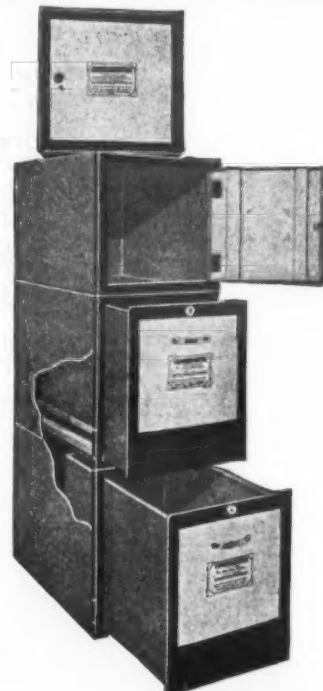


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The STANDARD of Comparison

Since the advent of MASTER Lockers, they have been the accepted standard of comparison throughout the industry. MASTER has always led in outstanding improvements and Locker Operators everywhere depend upon MASTER. You can also profit by doing so.

MASTER FOOD CONSERVATOR



Gives you more for your money. That is why it is the "Choice of the Industry." Sturdily constructed. Fulfills every requirement for profitable locker operation. You get permanence with MASTER.

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Your requirements will be shipped promptly. Equip for the future as well as the present. Don't wait... do it NOW.

Endorsed by and sold through distributors of refrigeration and insulation.

Master Manufacturing Corp.
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Member of Frozen Food Locker Manufacturers and Suppliers Ass'n. organized for your protection.

Over 400,000 Master Food Conservators in Use

Men Who Determine Servel's Policies



George Jones (left), Servel's general sales manager and author of the following statement of policy on Servel's all-year gas air conditioner, confers with Louis Ruthenburg, Servel president.

Servel Explains Policy of Selling Conditioner Through Utilities

By George S. Jones, Jr., Vice President and General Sales Manager, Servel, Inc.

In the maze and mirage of postwar product and market conjectures, there is the solid reality of air conditioning. Its commercial aspects are not new. Its residential considerations are.

Servel, engaged in all phases of the all-year air conditioning market, has lately made known its intentions energetically to enter the residential field. A "Post War Action" program, based upon the promotion of Servel all-year air conditioning through gas company development in postwar market expansion has been announced through regional meetings, coast to coast. Some thousands of mail inquiries have been aroused from prospective distributors, dealers and salesmen.

It seems, therefore, the time to issue a statement of the intended Servel distributive policy in its market development of air conditioning, particularly from the all-year standpoint and with specific reference to residential all-year air conditioning possibilities.

Markets are seeded, nurtured, cultivated and harvested like any crop. They require time and order in their development. Private distribution could not hope to harvest that which is just appearing, nurtured as a venture beyond its ability presently to assume. But in its good time, the crop of air conditioning demand will bloom and bear fruit. At that good time, private distribution will find a profitable harvest.

There is no other engineering achievement that contributes more to living enjoyment than air conditioning. All-year air conditioning of the Servel residential type delivers efficient heating, effective cooling, controlled humidification, positive dehumidification, selective air circulation and thorough air cleansing to produce a uniform comfort, health and protection that energizes, invigorates, relaxes, relieves—in manners of priceless living and working enjoyment.

Mrs. Christine Frederick first advanced the "per-use" formula of judging product values in relation to retail prices. She said something of a cherry pitter which, because used only a few hours each year at best, has a high "per use" cost; while a washing machine, used in important family service five hours each week has a much lower "use-cost" and, therefore, is a better buying investment. On this basis of "use-cost" there is no other convenience that creates more value in every comfort to all members of the family more hours each day than does air conditioning.

But, compared only by retail price, the investment in residential air conditioning may seem very high. So, along with that engineering and research that has brought product performance to the present significant position, there must be added that persuasive educational investment by someone distributively capable that will kindle want and desire for residential air conditioning with consequent public demand. The first phases of this education will take sales effort; effort of a very intelligent character.

Linked with this intelligent selling effort, there is the companionate need for proper application engineering. The variables of proper air distribution to achieve efficiency of all-year residential air conditioning are considerable, and proper application of all mechanical elements requires

engineering wisdom properly to correlate all of them. The sale and distribution of residential all-year air conditioning, in its pioneering marketing development is a consideration that cannot be lightly handled.

It is as important to produce a customer as to produce the product. And it costs as much in personal effort and persuasive skill. So there is a "business-building" factor to be considered in customer-building of the all-year air conditioning market, beyond the investment of Servel in product engineering and basic data, which other distributive factors than it will have to bear in establishing popularity for this public service. Who can presently best provide this persuasion investment other than the gas companies?

United Gas Corp., one of America's largest utilities, has pioneered in air conditioning since 1934 and throughout its properties there was started a broad investigation of all-year residential air conditioning, covering all types of equipment and combinations of gas and electrical apparatus.

Subsequently, this utility installed 175 units, ranging from 5 to 62 tons refrigerating capacity, and set up close checks to judge the elements of engineering, installation and operation. From this experience, interrupted somewhat by the war but upon whose actuarial data there has been constant and scientific observation, Joe H. Gill, president of that utility, is on record that the properties concerned can expect quite speedily to establish a 10% residential and small commercial saturation of customers on its mains after war.

The United Gas Corp.'s experience is significant from another standpoint, in that on the basis of first year-round load analysis, the electrical equipment required in Servel air conditioning installation develops an electrical load revenue which compares to gas in the ratio of 8 to 13. Indeed, in some areas, this ratio of electrical to gas revenue has been of the nature of 2 to 3. Such equipment as Servel's can also provide the strictly electrical utility a load revenue with no capital venture.

All-year air conditioning is not package merchandising. You do not meet the customer on the floor, persuade him to buy a unit of his choice, deliver and install it the next morning. The private distributor would find it possible to survive at this present market stage if he could enjoy the fruits of his installation labor and superintendency without the necessary promotional expense. But there will not immediately be in the purchase price that extra and most important amount for him to properly promote the product.

Therefore, Servel is dedicating itself to exclusive distribution through gas utility companies. They draw a load-revenue that will permit them solidly to finance initial promotional effort with proper amortization; conditioning the market to habits that will permit eventual entrance of private distributors with established policies and practices that will mean healthful economics for all . . . in terms of volume, burdens and profit.

As to private distributors of general nature, Servel counsels such earnest inquiries not rashly to enter this market prematurely; to wait until groundwork has been laid that will make it sound and practical for them.

How big is the market? Aside from existing construction having to do with air conditioning possibilities in replacement and modernization, estimates from authoritative sources indicate that from 900,000 to 1,600,000 homes will be needed for the first

postwar decade, annually.

It would be in line with substantiated market practice if we considered that when a point of saturation had been reached in which 10% of new homes were air conditioned, there would obtain a public acceptance,

word-of-mouth popularity for all-year residential air conditioning that would push the industry into a volume capable of sustaining private distributors on the basis of the profit opportunities in merchandising markup itself.

Genuine Grunow CARRENE METERS and FLOATS

Save time and money with reliable Grunow Meters and Floats—rebuilt to factory specifications and factory-checked by the only manufacturer of genuine, originally designed Grunow parts. Assures you trouble-free servicing. Send old parts when ordering.



SEND FOR NEW, CONDENSED GRUNOW SERVICE MANUAL
PRICE 50c

Grunow
AUTHORIZED SERVICE, INC.

4313 W. Fullerton Avenue, Chicago, Illinois

FACTORY TESTED PARTS

Put Your Money in the SOCK!



RIGHT NOW, when the enemy's knees are starting to buckle, it's time for those of us on the home front to pour it on with everything we've got! The Fourth War Loan is our chance to start pouring.

You're undoubtedly buying war bonds every payday and you probably bought an extra one during the last war loan drive. You may even have the money laid away for another this time. Frankly, that isn't enough.

Unless you could walk into an army hospital and explain to the boys back from Salerno just why you can't

In cooperation with the U. S. Treasury Dept., Walt Ditzen makes this contribution depicting the spirit of the Fourth War Loan to the Philco series of war cartoons.

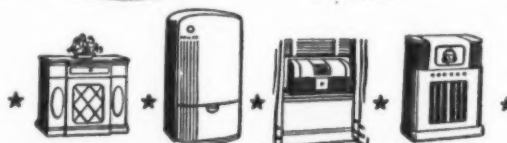
double or treble your extra bond purchase—mister, you aren't pouring it on . . . you're pulling your punch.

And the surprising part about buying a war bond is that you don't give anything. It isn't a donation. It isn't charity. It's government money with the assurance that you'll get \$4 back for every \$3 you put in. It's your personal investment in victory!

From January 18 to February 15, let's really pour it on, with at least two extra war bonds instead of one!

PHILCO CORPORATION

LET'S ALL
BACK THE ATTACK!
Buy extra war bonds during
the Fourth War Loan . . . as
your investment in Victory!



Philco war research today will produce a greater Philco tomorrow. And, more than ever, the most valuable dealer franchise in the appliance field.

Tune In Next Sunday!
"RADIO HALL OF FAME"

—a Radio Review of the Top Hits from all fields of entertainment! Sundays, Blue Network.

Servicing the G-E Refrigerator Line

From the General Electric Service Dept.'s
'Appliance Service Handbook'

Editor's Note: Beginning in this issue, Air Conditioning & Refrigeration News presents the first of a series of articles on the servicing of General Electric household refrigerators. All G-E units will be described and service methods for each outlined.

Prepared by the Production Service Division of G-E's Appliance and Merchandise Dept., this information is published in the News with the permission of General Electric Co.

Fundamental Parts of Refrigerating Machines

The fundamental parts of General Electric household refrigerating machines are described below.

1. The compressor, driven by an electric motor, compresses the refrigerant and pumps it through the system.

2. The condenser liquefies or condenses the compressed refrigerant
(Concluded on Page 19, Column 3)

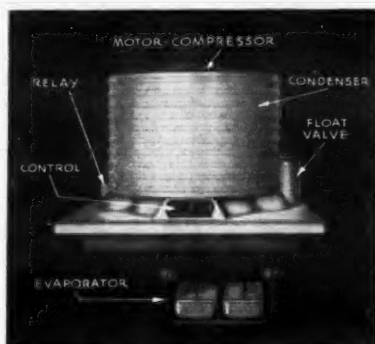


Fig. 2—Type CA-1A machine, Monitor Top—Sealed.

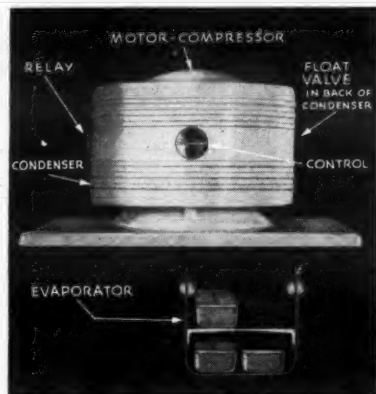


Fig. 3—Type CA-2B machine, Monitor Top—Sealed. (CA-2A and CA-1B are similar.)



Refrigeration and Air Conditioning Equipment

Twenty six years continuous service to the industry comprises a background of experience that is at your service if we can be of help to you. Our engineering department is at your disposal—any time. Write for complete information on any of the following products.

EVAPORATIVE CONDENSERS

All Prime Surface Cooling Coils—Copper or Steel

AMMONIA CONDENSERS

Shell and Tube—Horizontal or Vertical

FREON CONDENSERS

Shell and Tube—Shell and Coil

DIRECT EXPANSION WATER COOLERS

Indirect Air Conditioning and Processing Water

FLOODED WATER COOLERS

Drinking and Ingredient Water

BRINE COOLERS

Steel Tubing or Pipe

HI-PEAK WATER COOLERS

Storage Type, Direct Expansion

FINNED COILS

Air Conditioning—Low Temp.

PIPE COILS

Steel— $\frac{1}{2}$ " to 2"

HEAT INTERCHANGERS

Refrigerant Suction Line—Liquid to Gas

OIL SEPARATORS

Separators—Not Traps

LIQUID RECEIVERS

Refrigerant

ACCUMULATORS

SURGE DRUMS

Refrigerant

FORCED CONVECTION UNITS

Cold Dispensers

SHELL AND TUBE HEAT EXCHANGERS

Liquid to Liquid—Gas to Gas, etc.

ACME INDUSTRIES

Jackson, Michigan

Several Basic Types of General Electric Co. Refrigerators Identified For Service Men

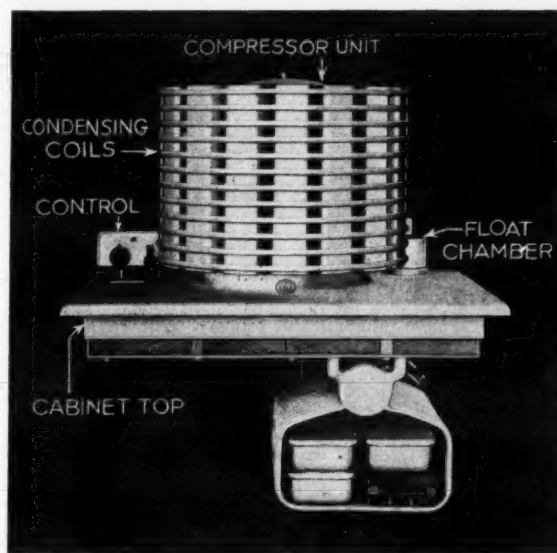


Fig. 1—Type DR machine, Monitor Top—Sealed. (D, DA, DRA, DRB, and DRE are similar.)

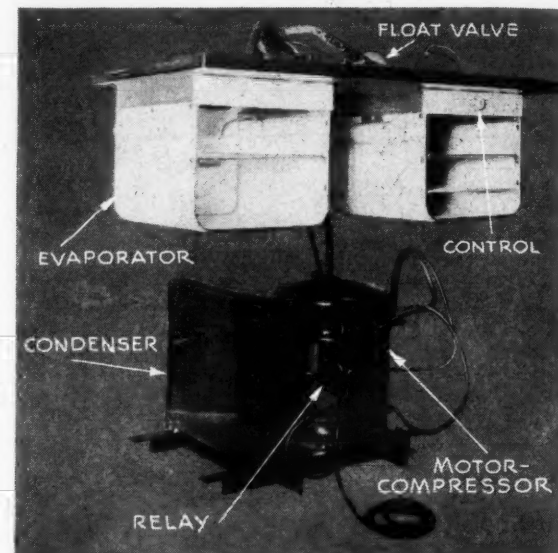


Fig. 7—Type CE machine, Flatop—Sealed.

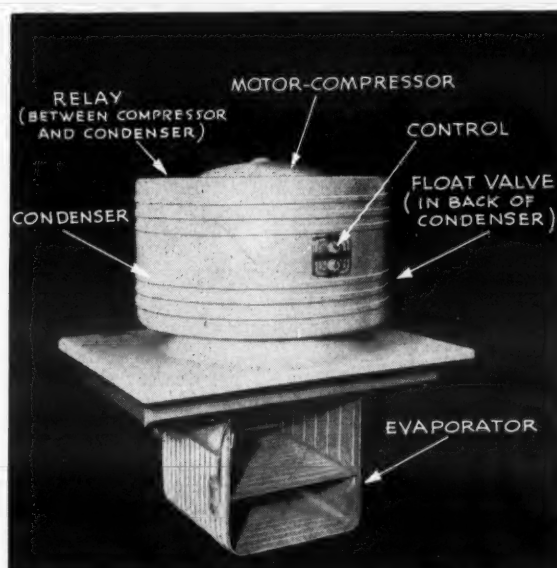


Fig. 4—Type CK machine, Monitor Top—Sealed.

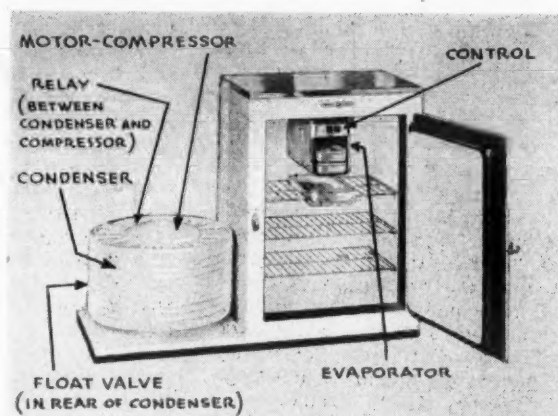


Fig. 8—Type DK machine, Under Drainboard—Sealed.

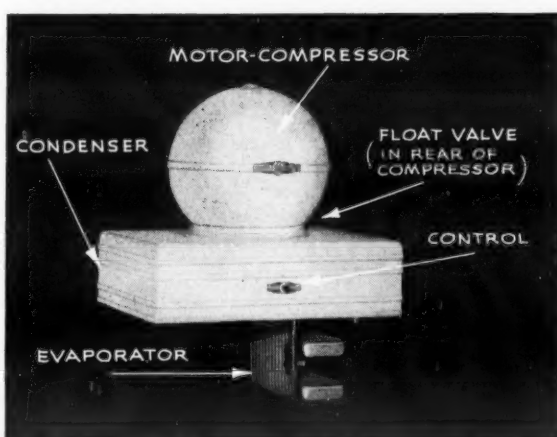


Fig. 5—Type CG machine, Monitor Top—Sealed.

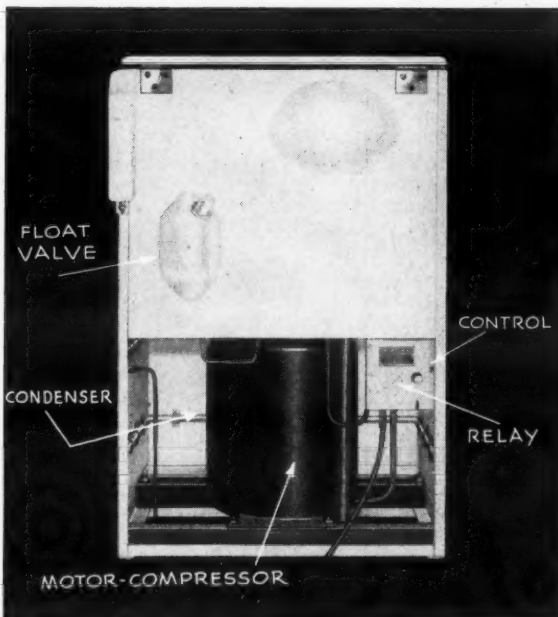


Fig. 9—Type LK machine, Lifttop—Sealed.

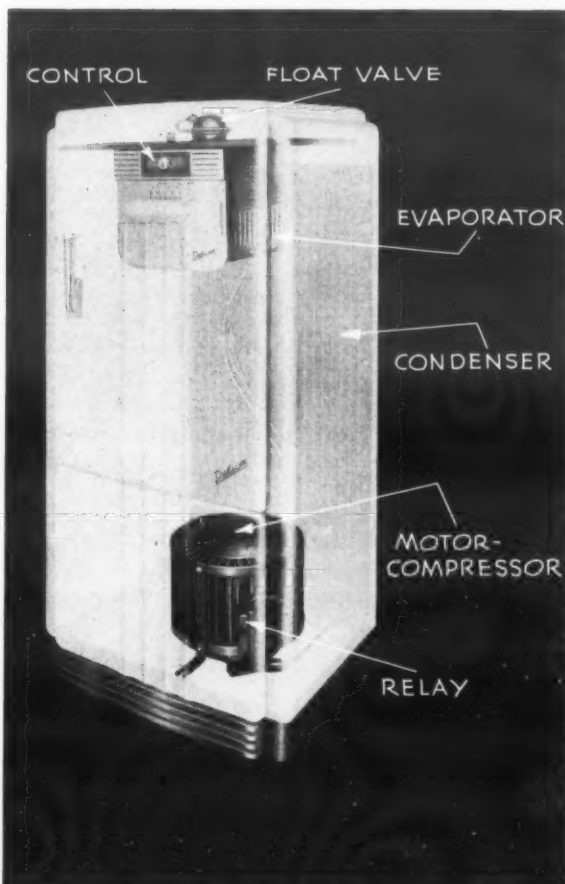


Fig. 6—Type CF machine, Flatop—Sealed. (CFS, CH, CJ, and FBA are similar.)

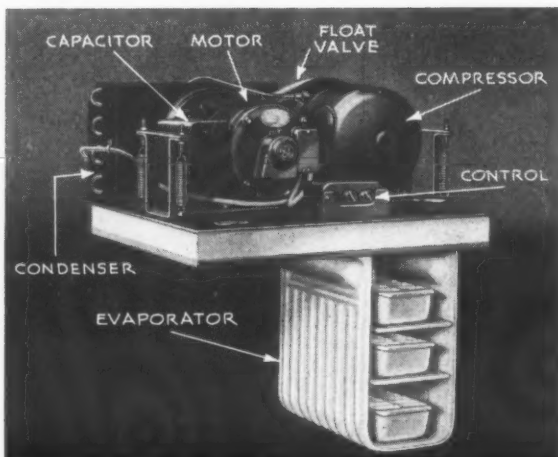


Fig. 10—Type CB machine, Flatop—Open.

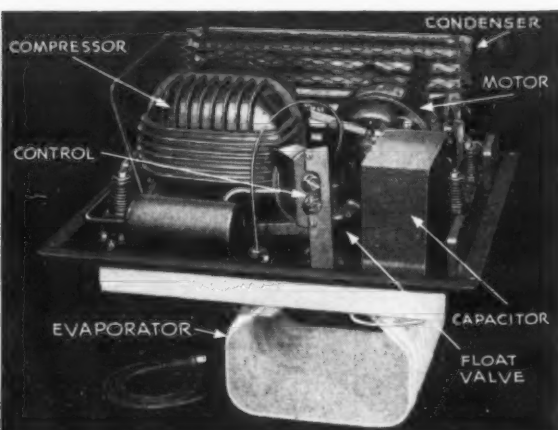


Fig. 11—Type CM-1 and CM-2 machines, Flatop—Open.

Additional Types of Refrigerator Units Manufactured by G-E

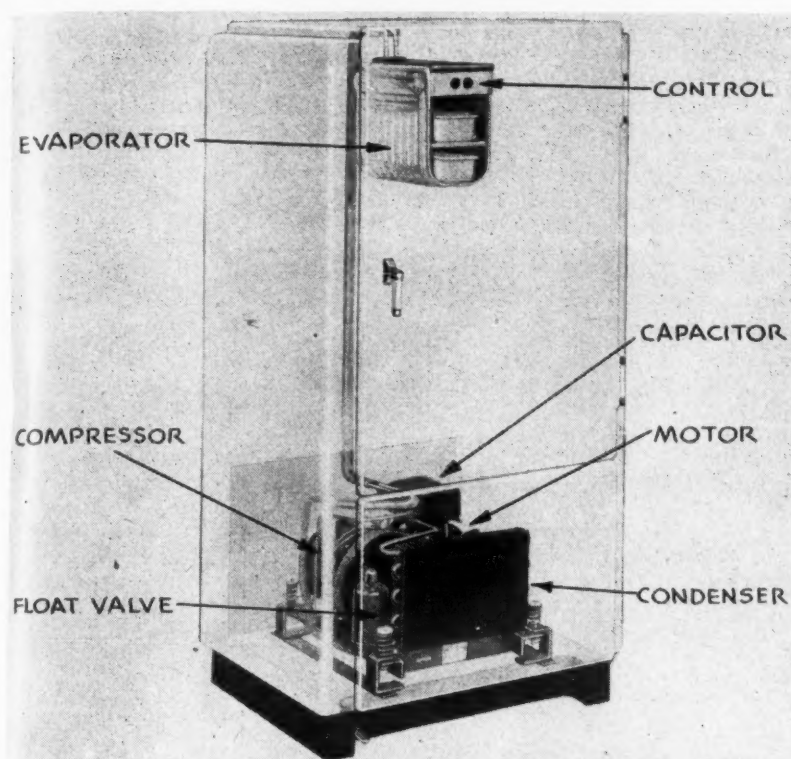


Fig. 12—Type CD machine, Flatop—Open.

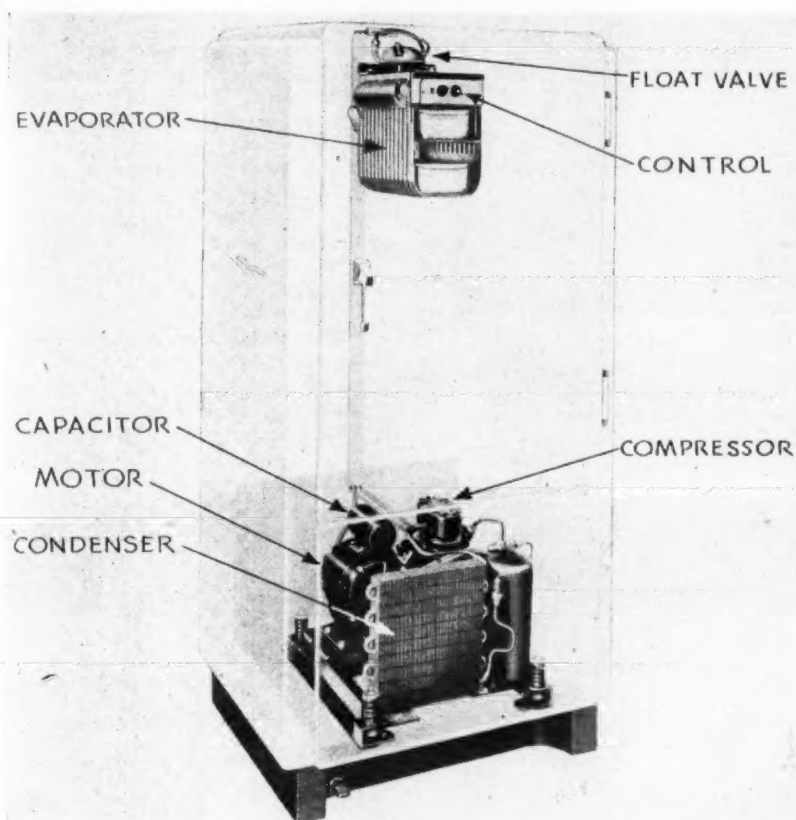


Fig. 13—Type CM-32 machine, Flatop—Open. (CM-33, 34, 311, and 312 are similar.)

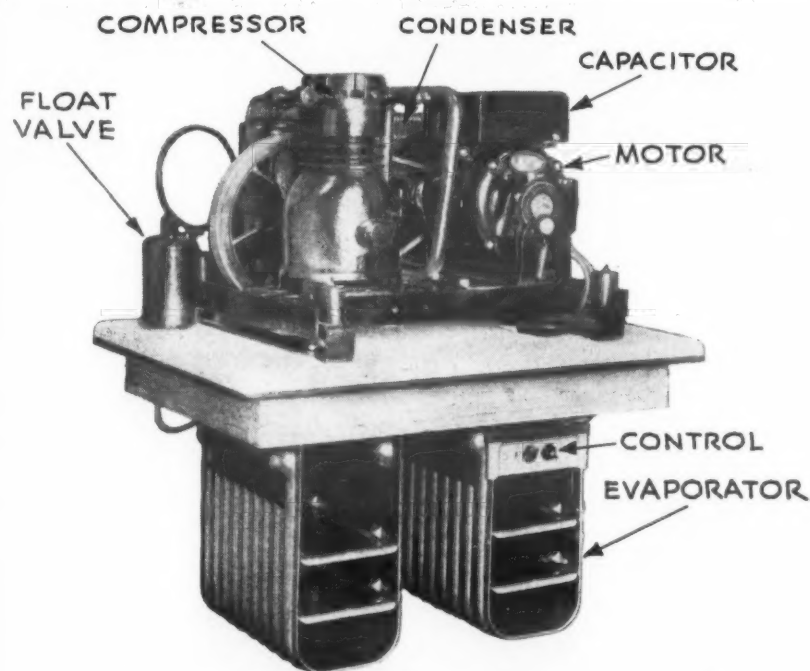


Fig. 14—(Above and at left) Type CM-35 machine, Flatop—Open.

Servicing the G-E Line

(Concluded from Page 18, Column 2)

3. The float valve regulates the flow of liquid refrigerant from the condenser into the evaporator. A few Open-type machines are equipped with an expansion valve rather than a float valve.

4. The evaporator, which is under low pressure, allows the refrigerant to expand and boil. This expansion absorbs heat from the interior of the refrigerator.

5. The temperature control automatically starts and stops the machine. It also provides a manual on-and-off switch and a device for defrosting the evaporator.

6. The starting relay is a magnetic device for making and breaking the motor starting winding circuit.

The relay base serves as a terminal block on Type CA and most Scotch-yoke machines (CE, CF, CH, CJ, CK, DK, FBA, and some LK). Type CG, DR, and some LK machines have the relay and control combined. The combination is usually referred to as the control and its base serves as a terminal block. There is no relay on Open-type CB, CD, and CM machines.

7. A capacitor is used in series with the starting winding of the motor to reduce starting current and to increase starting torque. A capacitor is used on all Open-type machines and on some one-sixth horsepower Sealed machines.

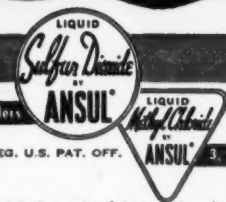
The location of these parts on the various types of machines are shown in Figs. 1 through 14.



How do you test the PURITY of SULFUR DIOXIDE and METHYL CHLORIDE ?



Just look for the name **ANSUL**



5, 10, 25, 70, 100 and 150 lb. Cylinders

*REG. U.S. PAT. OFF.

3, 6, 15, 40, 60, 90 and 130 lb. Cylinders

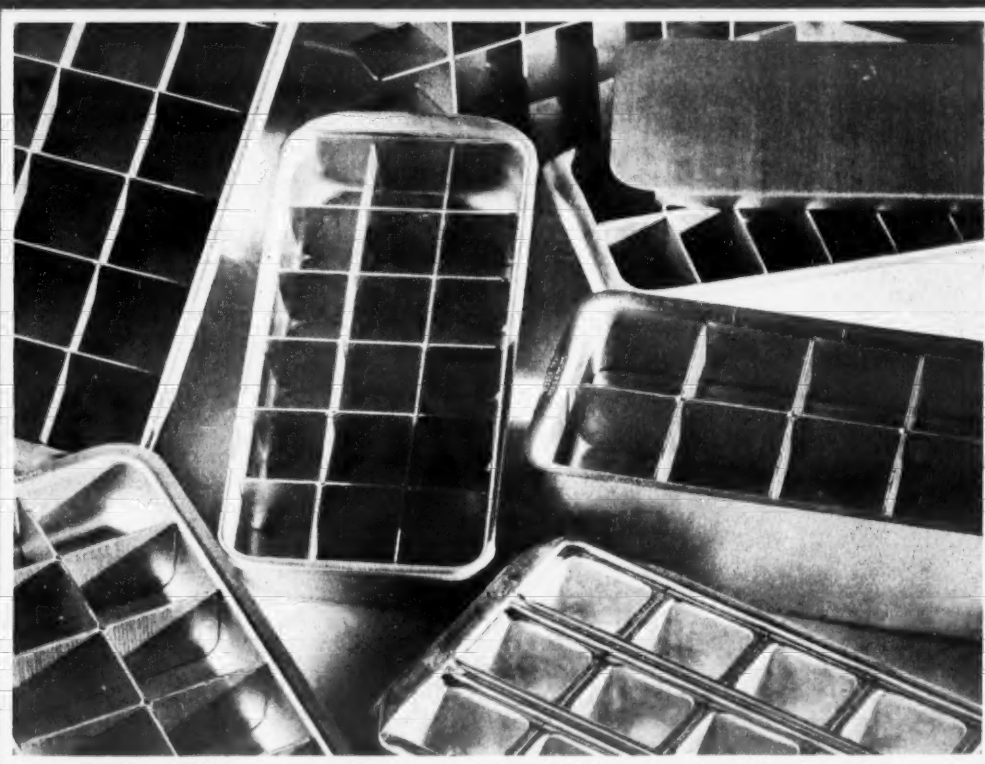
Available in carload lots or handy cylinders sized for servicemen's needs.

ORDERS FILLED PROMPTLY through your Ansul Jobber.

ANSUL CHEMICAL COMPANY
MARINETTE, WISCONSIN

Agents for Kinetic's "FREON-12"

AC-2-44



ICE CUBE TRAYS..PREWAR and Postwar MODELS

Made of aluminum, because that's how you assure fastest freezing; this material is a superior conductor of heat. Aluminum is highly resistant to corrosion and is light in weight. It is "friendly to food". That's why aluminum was almost universally used, before the war, for ice cube trays and grids.

It's quite likely that you can get Alcoa Aluminum sheet for this purpose for the refrigerators scheduled to be built soon. No more man-hours will be required—probably fewer—for making ice trays and grids of aluminum. And you doubt-

less have the tools and finishing equipment ready to get going immediately upon release of materials.

Alcoa engineers will gladly supply any information your manufacturing department may need for change-over. "What alloy should be used?—Is there new, war-developed data on fabricating it?—What is the correct finishing procedure?" Workmen, unfamiliar with this kind of production, will have such questions. Alcoa is the logical place to find the answers. ALUMINUM COMPANY OF AMERICA, 1975 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA  **ALUMINUM**

Rebuilding Hermetically Sealed Units Calls For Specialized Shop Procedure

By Ross Potter

EDITOR'S NOTE: The Jan. 3 issue of the NEWS presented something of the history of Service Parts Co., a Melrose Park, Ill., firm that is doing an unusual job of rebuilding hermetically sealed Majestic, Grunow, General Electric, and Westinghouse units. The following article goes into detail as to the special equipment used, and as to exactly what happens to a unit from the time it hits the company's receiving dock until it gets inspection's final OK.



With the Amcoil Food Conditioner now available for war-time use on fighting vessels and merchant ships, transport planes, and in army commissaries . . . with its future usefulness in the post-war domestic market assured, American Coils, Inc. has turned to further development of food preserving units.

As companion items to the Food Conditioner, Amcoil engineers have developed two new units, each of which is designed for a definite purpose, thus rounding out the line of food preserving units that will be available for post-war markets.

The Zero-Breeze low temperature unit is designed to keep foods—particularly meats—at temperatures below freezing, for short term storage. It is also applicable for the proper storage of frozen foods. This unit is equipped with a new type defrosting device and visible signal. The distinct advantage is that the temperature of the cabinet is not materially affected by this automatic defrosting process.

The All-Service Unit Cooler is especially adapted for preserving foods where humidity is not a factor—such as beverages and bottled perishables.

These new units are the result of studies made by Amcoil engineers, and based on recent experience with Amcoil Testing Chambers. These cabinets are widely used in war industries for testing materials, instruments and equipment at temperatures ranging from -95° F. to +160° F.



Incoming parts and units alike are taken in at the Service Parts Co. receiving dock, at the west end of the building. Here they are uncased, the empty crates being sent to a storeroom overhead to wait until the units they contained are ready for return. Each crate is tagged toward that purpose.

The company does not undertake partial repairs: units are completely rebuilt, at fixed prices. Upon being uncased, each unit is inspected for missing parts and for trouble diagnosis. If it was sent in on an exchange basis, its major assemblies are then distributed to the various specialized departments, and the customer's order is filed until a rebuilt-exchange unit is ready.

Units sent in for exchange may be replaced as fast as replacement units come off the assembly line, but units sent in for repair must await their turn in proceeding through the entire system. For this reason, the customer is told, a time lag of 30 days for smaller repairs, 60 days for cold controls, and 90 days for compressor repairs, must be allowed.

Once tagged, the refrigerant assemblies are ready for discharge of their gases, and are taken out into the open area north of the plant. Here the gas is discharged without danger.

Possibilities of a stuck float or check valve are anticipated before they are sent any farther. The units are broken down in a special fire-proof brick-walled room, and worked on by only one man at a time. When SO₂ fumes begin to escape he leaves the room, seals the door behind him, and turns on a blowout fan that clears the air in a few minutes.

The compressor and electrical assemblies are routed to different de-

partments, but in each case all parts are broken down into individual pieces, metal parts are cleaned in chemical solution, rustable pieces are sprayed with an initial prime coat for protection, and each part is inspected for individual trueness and strength.

Compressor units proceed to the power lathe, the first of several pieces of special equipment necessary for handling hermetically sealed units. Here the units are cut open. Single exception is the bolted type of General Electric units, but these comprise less than half of the G-E's received.

The compressor bottoms are sent to the cleaning room, where paint and grease are removed by immersion in a boiling chemical bath and by force blasting with an Oakite solution. The parts are then rinsed in cold water, and given a final immersion in fresh boiling water to facilitate drying.

Pressure for the air bath comes from two big air compressors of 2 hp. each, located in the spray chamber. Together these feed compressed air to all parts of the shop, lines from one running to the shop and controls rooms, from the other to the cleaning, testing, and spray rooms. The air line to the paint applicator is choked down to 50-75 lbs. pressure.

After cleaning, metal parts go to the spray room for a prime coat protection that protects against rust.

Inspection and repair go ahead according to established schedule. The units are separated into four groups, each one representing a different manufacturer, and when 20 or 25 of one brand are collected, they go on to the man at the compressor bench handling that brand. All types of rotors are handled: copper, aluminum, or steel.

The principle of brand specialization has proved time-saving. After repair processes had been studied for several weeks, it was found that a man working on the kind of unit he felt most adept with could repair four of those units in the same time that it took him to repair three miscellaneous others.

An electric saw is used to cut apart Carrene meters, and for various brass and steel cutting jobs. The bench also

(Continued on Page 21, Column 1)



1. Opening operations. From left to right, the first man is buffing Majestic parts. The second, refacing needles for Grunow floats. The third, cutting open a G-E compressor on the lathe. The fourth, welding a Westinghouse compressor. The fifth, grinding a part for a Majestic assembly. The open exhaust fan over the welding and lathe cage will clear the entire room. When closed, it takes fumes from the compartment beneath.

If the unit was sent in on a purely repair basis, another procedure must be followed. The difference between the two became significant when the Federal excise tax was imposed upon exchange units. Under the government's definition, the introduction of one substitute part into a unit brings the entire job under an exchange classification.

Whether the substituted part is new or not makes no difference. The tax imposed is considerable, whereas repair jobs as such are not taxed.

Thus units sent in for repair only are carefully dismantled upon receipt, and each part is labeled and specifically routed for re-assembly. The repaired unit returns to the shipper with exactly the same parts it included when he sent it.

Each unit sent in for repair only thus is inspected as above, and an invoice is made out in quadruplicate: One copy for the company's files, one for the customer's order file, one to ride through with the job as a packing slip, and one to be mailed immediately to the customer as an acknowledgement of the unit's arrival, notification of any parts missing, trouble diagnosis, the price to be charged, and approximate delivery date.



2. Opposite view of the same room. From left to right, the first man is working on Carrene meters. The second and third are putting a G-E compressor through the wattage and volumetric tests. The fourth man is working on a Westinghouse unit. The fifth is operating an Arbor press, which shucks the rotors from G-E and Majestic compressors. The sixth man is setting up a Majestic unit. Seventh is working on a Grunow unit.

Send For These
Bulletins

Bulletins MU-182 and MU-183 contain information that is necessary in the selection of the right motor for the job. They will be sent upon request.



ARE AVAILABLE FOR ALL OF YOUR EQUIPMENT USED IN WAR WORK!

Wagner MOTORS

FIELD ENGINEERING
SERVICE

Wagner maintains 25 branch sales and service offices conveniently located throughout the United States. Each one of these branches is manned by trained field engineers who are ready to assist you in solving your motor application problems.



Wagner Electric Corporation

ESTABLISHED 1891
6441 Plymouth Avenue, St. Louis, Mo., U. S. A.



★ ★ ★ ELECTRICAL AND AUTOMOTIVE PRODUCTS ★ ★ ★

Rebuilt Units Undergo Week's Testing Before Getting Final OK

(Concluded from Page 20, Column 5) has such specialized machinery as a vertical action press, to take rotors out of the compressors; a honing machine, for reaming various parts; and a needle refacer, to polish off the slight pitting on Grunow needles caused by the chemical action of methylene chloride and moisture.

turns at a speed of one revolution in three minutes, and the domes welded together.

Four torch men work in miscellaneous parts repair, soldering and brazing Carrene meters, evaporators, floats, and the like.

To fill an evaporator shortage now being felt in repairing several refrig-

except for controls, proceed to the oven for dehydrating. The oven is a new one, received by the company during December to replace the one they had used since 1938. Where the old oven held only 12 units and took 18 hours to complete the job, the new one holds 24 units and takes only 15 hours.

The vacuum pump working with the oven guarantees a vacuum of 29 inches. It is powered by a 3-hp. motor, with an automatic on-and-off switch and all electric controls. When the oven is closed at 6:00 p.m., it can be left for the night and opened again at 9:00 the next morning.

During this time fans within the oven have been circulating the air to maintain a 220-225° temperature, ensuring equal treatment of all the units contained. The same fans draw in cool air when the oven is opened in the morning, cutting down the time necessitated for unit handling.

More important than the time economy, the company anticipates a substantial saving in the amount of repairing they do a second time under their own guarantee terms. Their 1941 figures showed 8% of all outgoing jobs returned, 2.5% damaged by refrigerant leakage, 2.5% by rough handling, and 3% damaged by moisture retained in the system.

Under conditions of more efficient dehydration, the company believes that last figure can be cut to 1%. They are going to keep record to see at the end of the year whether or not they are right.

From the oven the units go to the charging board, to be recharged with new dehydrated refrigeration oil, and with sulphur dioxide refrigerant. Condensers, fans, and controls now are re-installed, and the complete unit is ready for overall testing.

In the testing room, conditions simulating the same tough going the refrigerator may meet on the job are reproduced. The temperature is held between 75 and 80° F. Here the unit stays a minimum of five days, careful check of its cycle being taken by chart.

Given a final OK, the unit goes back to the spray room for a final coat of paint. Majestic, Grunow, and Westinghouse units are painted grey,

G-E white. The G-E control unit is trimmed black, and so this is taken off and given a separate treatment. Coming out of the final spray room, the unit in effect is brand new.

At the shipping room the unit is packed into the original crate it came in, given its final papers, including an unconditional guarantee for a year, hits the loading skids, and it's on its way.



3. Here controls, fans, condenser, and transformers are worked on. The two men here are assembling repaired parts for a Majestic unit.



4. This room, under a constant 75-80° F. temperature, gives the final five-day testing to the completely rebuilt units. All the four makes handled by the company can be seen here.

After the cleaning and repairing have been completed for each part, the process of re-assembly and testing begins. Stator and rotor windings are checked against excessive current production in the wattage test machine, and the entire compressor undergoes a volumetric test of the amount of vacuum pulled.

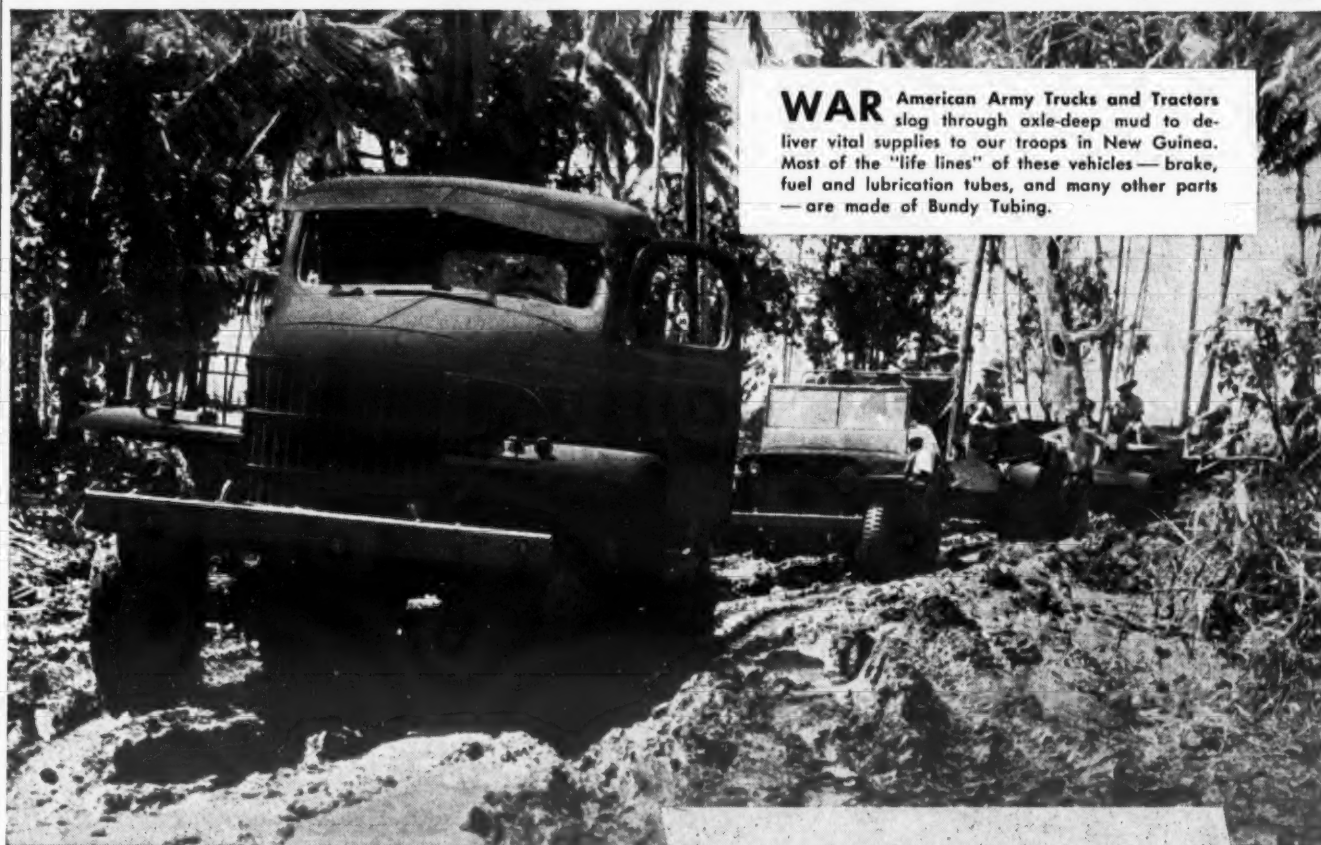
The amount varies with different compressor sizes, but the minimum figure allowed is 27 inches, within five minutes, under 100 pounds pressure. When the compressor has passed this test it is ready for hermetic resealing. The domes and compressor are placed on the lathe, which

erator brands, the company takes standard Westinghouse evaporators, cleans them out, fixes mounting brackets to the top, solders copper tubing to the bottom, and ends up with an evaporator that efficiently replaces monel or porcelain ones often received in conditions beyond repair.

Because these evaporators can be substituted in various other brands which the company does not handle, an oversupply is maintained for wholesale orders by other firms. The brackets are adjustable to fit standard makes.

The rebuilt units, now complete

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When that time comes, much will depend upon speed of reconversion. Millions will look to industry for employment. Needed products must start flowing from factories. Relief must be rushed to stricken nations.

Bundy—whose tremendous output of tubing is now being used in nearly 10,000 different parts for war vehicles and equipment—will be ready.

When "V" Day comes, the tubing life lines we make for war will become life lines of peace—for an infinite variety of products in scores of fields.

Bundy engineers are ready today to help in the planning of peacetime products in which tubing may be used. For information, write Bundy Tubing Co., Detroit 13, Mich.

BUNDY TUBING



BUNDYWELD double-walled steel tubing, hydrogen-brazed, copper-coated inside and outside. From Capillary sizes up to and including 3½" O. D. This double-walled type is also available in steel, tin-coated on the outside, and in Monel.

BUNDY ELECTRICWELD steel tubing. Single-walled—butt welded—annealed. Available in sizes up to and including 3½" O. D. Can be furnished tin-coated outside in smaller sizes.

BUNDY "TRIPLE-PURPOSE" tubing. Double-walled, rolled, from two strips, joints opposite, welded into a solid wall. Available in all Monel; all steel; Monel inside—steel outside; Monel outside—steel inside. Sizes up to and including 3½" O. D.

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Now that the substitution of methyl chloride for "Freon" faces you . . . increasing the corrosion hazard . . . you must play safe. Use the drying agent that removes acids as well as moisture . . . Davison's Silica Gel!

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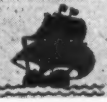
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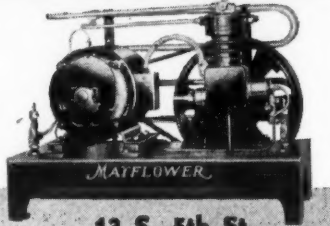
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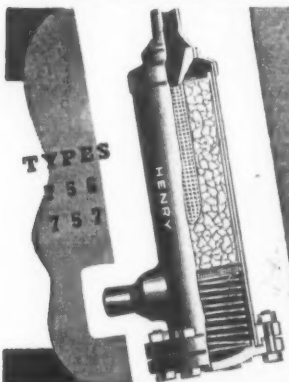
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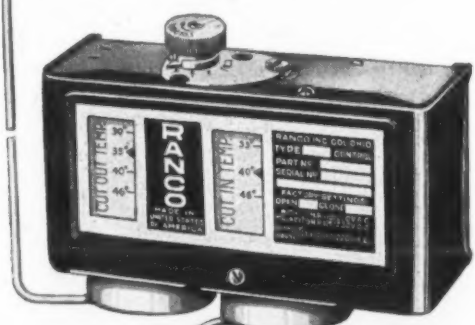
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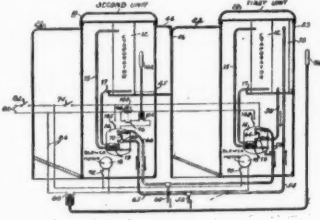
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PATENTS

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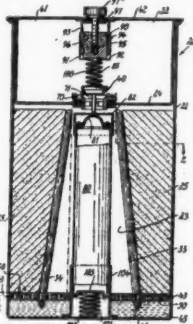
2,336,549. REFRIGERATING APPARATUS. Andrew A. Kucher, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application Nov. 28, 1941, Serial No. 420,836. 8 Claims. (Cl. 62-8).



1. Air conditioning apparatus comprising in combination, a first volatile refrigerant air conditioning unit, a second volatile refrigerant air conditioning unit, each of said units comprising an evaporator, a compressor and a condenser, means for circulating a stream of fresh air over said evaporators in series, a water coil arranged in said air stream, means for flowing water through said water coil and thereafter in thermal exchange with one of said condensers, and means for rendering one of said evaporators ineffective

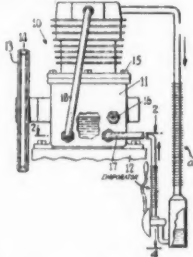
during light air conditioning loads, said last named means comprising a thermostatic means responsive to the temperature of the air leaving the first of said evaporators for controlling the flow of refrigerant through said second evaporator.

2,336,571. REFRIGERATING DEVICE. Armin Rodeck, Sunnyside, Long Island, N. Y. Application Aug. 16, 1940, Serial No. 352,831. 5 Claims. (Cl. 62-94).



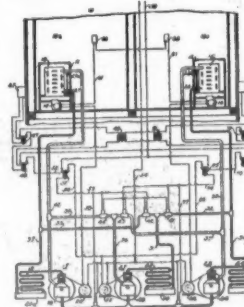
1. A casing, a receptacle for a solvent arranged to occupy a portion of the space within said casing and cooperating with the walls thereof to form a chamber; a formation within said chamber for holding a compacted mass of refrigerating material in position to be submerged by successive increments in the body of the solvent; an opening located in the wall of said receptacle in position to permit the passage of solvent from said receptacle to the interior of said chamber; and means governed by temperature changes within the chamber for controlling the passage of solvent thereinto from the receptacle.

2,336,641. REFRIGERATION APPARATUS AND METHOD. Peter Schlumbohm, New York, N. Y., assignor to Propane Development Corp., New York, N. Y., a corporation of Delaware. Application Feb. 29, 1940, Serial No. 321,563. 11 Claims. (Cl. 62-170).



1. The process of refrigeration comprising the steps of compressing a hydrocarbon refrigerant, utilizing a lubricant to aid in the said compression, condensing the refrigerant, evaporating refrigerant to produce cooling, passing the relatively cold fluid discharged from the evaporator in thermal association with said lubricant in sufficient quantity and at a sufficient rate to maintain said lubricant at such relatively low temperature level, while preventing direct contact of refrigerant with lubricant to retard and substantially prevent the formation of foam, and recompressing the said discharged refrigerant after it has absorbed heat from said lubricant and passing the refrigerant through the above steps to repeat the cycle.

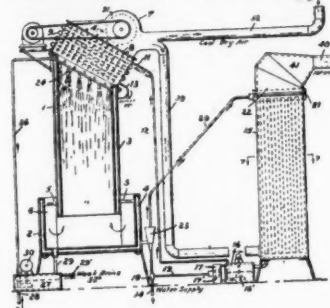
2,336,671. REFRIGERATING APPARATUS. Jewel C. Chambers, Los Angeles, Calif., assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Original application Nov. 29, 1933, Serial No. 700,171. Divided and this application July 9, 1941, Serial No. 401,677. 3 Claims. (Cl. 62-115).



1. In an air conditioning apparatus, a first evaporator, a first refrigerant liquefying unit connected to said evaporator and including a first compressor having a lubricant sump, a second evaporator, a second refrigerant liquefying unit connected to said second evaporator and including a second compressor having a lubricant sump, a booster refrigerant liquefying unit including a third compressor having a lubricant sump, means for automatically connecting said booster with either of said evaporators in accordance with environmental conditions, and

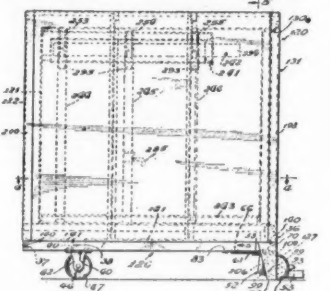
means for equalizing the lubricant level in said compressors.

2,336,674. LIQUID-SOLID TRANSITORY PHASE AIR COOLING OR CONDITIONING SYSTEM. Robert Brace Crawford, Iola, Kan. Application April 18, 1940, Serial No. 330,406. 17 Claims. (Cl. 123-4.3).



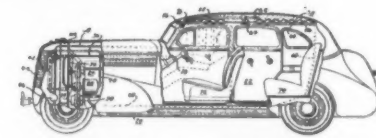
1. The method of dehumidifying and cooling air by means of a deliquescent dehydrating salt, which consists in spraying a concentrated solution of the salt into a space, contacting the air first with the spray of salt solution in said space, collecting and depositing a portion of the salt solution spray on a heat exchange surface so as to form thereon a coating of the salt in a solid state, and then contacting the air with said surface and solid salt while simultaneously cooling said surface.

2,336,687. REFRIGERATOR UNIT. Charles S. Johnston, Glencoe, Ill., assignor to Transportation Specialties Co., Chicago, Ill., a corporation of Illinois. Application June 11, 1941, Serial No. 397,557. 2 Claims. (Cl. 220-9).



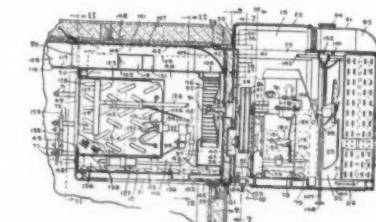
1. In a portable refrigerator unit, the combination of a lower supporting frame comprising a plurality of inwardly facing channelled members welded together to form a rectangular frame, a sheet metal plate covering the top of said channelled members and forming a part of the outer shell of said unit, angular corner posts, each comprising a pair of main flanges at right angles to each other, and each main flange supporting an attaching flange extending at right angles to the main flange by which it is supported, sheet metal side plates secured to said attaching flanges and forming the outer shell of said unit, a plurality of angle bars having their ends welded together to form a rectangular top frame, said top frame being welded to the upper ends of said angular corner posts, a sheet metal covering plate welded to said top frame member and extending over and down the back of said unit and secured to the corner posts at the back of said unit, and Z-shaped metal members having a body flange and oppositely directed end flanges at right angles to the body flange extending between said lower frame member and said upper frame member and located between said corner posts, and blocks of semi-solid heat insulating material of substantially the same thickness as the body flange of said Z members and located between said Z members and said corner posts, and a second layer of said heat insulating blocks, having broken joints with respect to the first layer and engaging one of the oppositely directed flanges of each Z bar.

2,336,733. REFRIGERATING APPARATUS. Harry B. Hull, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 28, 1939, Serial No. 270,552. 6 Claims. (Cl. 62-117).



1. Refrigerating apparatus including radiant cooling means comprising tubular refrigerant conducting means, drip troughs surrounding substantially the lower half of and spaced from the tubular means, and reflector means surrounding substantially the upper half and spaced from the tubular means for reflecting radiant energy onto the tubular means.

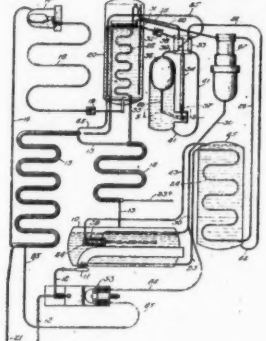
2,336,735. REMOVABLE COOLING UNIT FOR COMPARTMENTS. Frederick M. Jones, Minneapolis, Minn., assignor to U. S. Thermo Control Co., a partnership composed of Joseph A. Numero and M. Green. Application July 30, 1941, Serial No. 404,596. 4 Claims. (Cl. 62-117).



2. In combination with a food storage compartment such as the compartment of a transport vehicle having walls exposed to outside atmosphere, including a front wall having an opening therethrough, a cooling unit comprising a single unitary casing the walls of which form two chambers; an evaporator heat exchanger secured to the casing in one chamber, air moving means in said one chamber, a

compressor and air-moving means secured to the casing in the other chamber, a gas engine secured to the casing in said last-named chamber for operating the compressor and both air-moving means, the casing of the evaporator-containing chamber and said opening being relatively of a shape and size such that said casing part may fit inside and be projected through the opening to be within the compartment and the other chamber be outside the compartment and exposed to outside air, means supporting the first mentioned air moving means and forming the dividing partition of said chambers for insulating them one from the other, means for securing said casing and parts carried thereby on said front wall so that the casing as an entirety may be readily removed therefrom, and means on the casing portion within the compartment controlled by the temperature therein for controlling operation of the gas engine according to the temperature change demands made upon the instrumentalities operated by the gas engine.

2,337,067. SAFETY DEVICE FOR ABSORPTION REFRIGERATORS. Ralph E. Schurtz, Kansas City, Mo., and Joseph N. Both, Belding, Mich., assignors to Gibson Electric Refrigerator Corp., a corporation of Michigan. Application Dec. 12, 1940, Serial No. 369,876. 14 Claims. (Cl. 62-9).



2. A safety device for an absorption refrigeration system, including: movable means actuated by one condition of the system; a second movable means actuated by another condition of the system; means for balancing said means against each other; and safety means operatively associated with the balancing means and (Continued on Page 23, Column 1)

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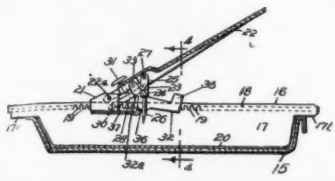
fedders
BUFFALO, N. Y.

Patents (Cont.)

(Continued from Page 22, Column 5)

adapted to be moved when either of said conditions of the system become abnormal.

2,337,071. ICE RELEASE APPARATUS. Richard M. Storer, Denver, Colo. Application Oct. 28, 1940, Serial No. 363,168. 11 Claims. (Cl. 62-108.5).

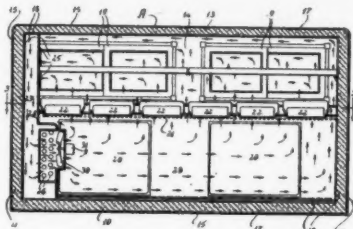


4. In a device of the character disclosed, the improvement which comprises a series of racklike teeth, a slide mounted for movement adjacent said series of teeth, a lever handle pivoted to said slide, a pawl pivotally carried on said lever handle in a position to engage the teeth, means on the slide positioned to urge the pawl into such engagement, an ice-separating element having downwardly projecting picks pivotally carried on said lever, and a link pivotally connected with said slide and with said ice-separating element for holding the picks in a substantially vertical position independently of the operating angular position of the lever handle.

2,337,089. REFRIGERATED DISPLAY CABINET. Walter A. Ellsworth and Donald F. Swanson, St. Paul, Minn., assignors to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application June 13, 1940, Serial No. 340,332. 2 Claims. (Cl. 62-102).

1. A refrigerated display cabinet comprising a closed chamber having display windows in its front, a fixed perforated horizontal partition dividing the chamber into elongated top and bottom portions

which are open and unobstructed through-out substantially their entire adjacent lengths, display trays supported on said partition so as to close passage of air



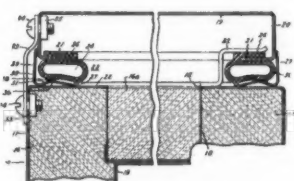
through the same except through spaces about the margins of said trays, cooling means located in the bottom portion adjacent an end thereof and having air duct communication at said end from the upper portion and to the lower portion of the cabinet chamber, and means for drawing air from the upper portion of said chamber and forcing it into the lower portion of said chamber after passing through the cooling means, whereby the cooled air will be put under substantially uniform pressure throughout the length of said lower portion, which pressure will cause the air to circulate about the display trays and to move from the lower portion uniformly to all parts of the upper portion through the spaces about said trays.

2,337,280. AIR OUTLET DEVICE. Maurice Serre and John B. Hewett, New York, N. Y., assignors to Anemostat Corp. of America, New York, N. Y., a corporation of Delaware. Original application March 28, 1941, Serial No. 385,754. Divided and this application May 22, 1942, Serial No. 444,074. 7 Claims. (Cl. 98-40).



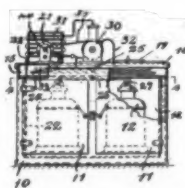
1. In an air outlet device, an open-ended hollow flaring member, a second flaring member within said first mentioned member and spaced inwardly therefrom to provide between said members an open-ended air passageway flaring forwardly relative to the longitudinal axis of the device, means for the supply of air to said passageway through the open rear end thereof, wall means at the front end portion of said first mentioned flaring member disposed at a lesser angle to the longitudinal axis of the device than the rear portion of said member to intercept supplied air flowing through the outer side portion of said passageway and to cause it to flow from the front end of said passageway at a lesser angle to the longitudinal axis of the device than during its flow through the rear portion of said passageway, and means separate from said second mentioned flaring member mounted against the outer side thereof and projecting outwardly therefrom into said passageway at a point spaced rearwardly from said wall means to intercept supplied air flowing through the inner side portion of said passageway and to deflect it across said passageway toward said wall means.

2,337,316. REFRIGERATOR CABINET. William Paul Dodge, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 20, 1941, Serial No. 411,610. 5 Claims. (Cl. 220-46).



1. Sealing means for sealing the opening between two members comprising means for securing the sealing means to one of said members, the surface of said sealing means presented to the other of said members having two longitudinally extending spaced-apart projecting portions, a trim strip for concealing the opening between the members and also the sealing means, a portion of said trim strip being disposed between said sealing means and the other of said members and being retained in position solely by engagement between one of said portions and the surface of the other of said members, the other of said portions engaging the said other of said members for sealing the space between the members.

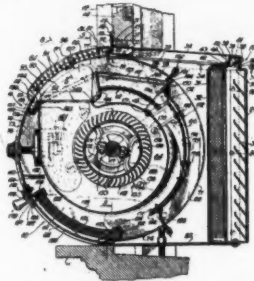
2,337,323. REFRIGERATING DEVICE. Howard B. Gates, Columbia Cross Roads, Pa. Application Jan. 9, 1942, Serial No. 426,217. 1 Claim. (Cl. 62-104).



A system of the character described, comprising a receiving chamber for receptacles to be cooled, a reservoir separate from said chamber, a water circulating coil in the lower part of said reservoir, a pump having a discharge connection with the influent end of said coil and having an intake connection opening in the lower part of said chamber, the effluent end of said coil having branched duct portions and respective terminal nozzles thereon, positioned in the upper part of said chamber in arbitrary spaced relation, means to support receptacles to be cooled in the chamber above normal liquid level in the chamber, said reservoir

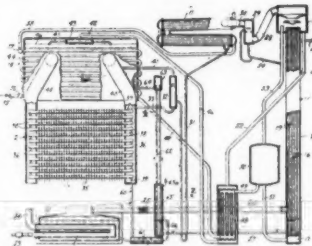
being constructed with its bottom constituting the top of said chamber, said water circulating coil being located close to the bottom of the reservoir, and a removable lid constituting the top of said reservoir, having a motor compressor-condenser unit mounted thereon and an evaporator coil mounted thereunder, positioned to lie closely over the water circulating coil, whereby said lid and devices thereon and evaporator coil thereunder may be lifted as a unit from said reservoir.

2,337,325. AIR CIRCULATING DEVICE. Edward C. Mach, Westfield, and Herman Harsperger, Roselle, N. J., assignors to General Electric Co., a corporation of New York. Application Jan. 10, 1941, Serial No. 373,990. 8 Claims. (Cl. 98-94).



1. A ventilating device comprising a centrifugal blower including a motor having a shaft extending outwardly from both ends of the motor, a pair of impellers fixed, respectively, to the outward extensions of said shaft, and a pair of housings enclosing said impellers and having axial inlets and similarly disposed peripheral discharge outlets, respectively; means supporting both of said housings for rotary movement about the motor shaft axis; a partition separating the inlets of both said housings from the outlets thereof and joining together said housings to form therewith a rotatable unit; a casing enclosing said rotatable unit and having a pair of spaced openings therein adapted to communicate, respectively, with separate atmospheres, and said openings being so arranged with respect to said housings and their rotary supporting means that said unit may be rotatably adjusted about the shaft axis to direct said outlets toward either of said openings; and sealing means cooperating with said partition and said casing to prevent bypass of air between said outlets and said inlets when said housing unit is in a position to discharge air through either of said openings.

2,337,439. REFRIGERATION. Philip P. Anderson, Jr., Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application Aug. 3, 1940, Serial No. 350,882. 8 Claims. (Cl. 62-119).



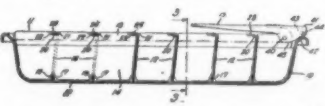
1. In a multi-pressure absorption refrigeration system, a generator and a condenser adapted to operate at one pressure and an evaporator and an absorber adapted to operate at a lower pressure, connections between the aforementioned parts to provide circuits for circulation of refrigerant and absorption liquid including means to form liquid columns to maintain the pressure differential, said evaporator extending below said absorber, and means for raising against the force of gravity liquid refrigerant passing from a lower part of said evaporator and conducting the raised liquid into the path of flow of the circulating absorption liquid.

2,337,450. FREEZING TRAY. Ralph H. Chilton, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Feb. 27, 1937, Serial No. 128,153. 12 Claims. (Cl. 62-106.5).



1. A partitioning grid for a freezing tray, said grid comprising: a main wall having relatively longitudinally movable upper and lower sections, and a series of transverse partition walls each loosely retained upon said main wall and being capable of a tilting movement relative thereto; said upper section of said main wall having means thereon serving to successively engage and tilt said transverse walls upon longitudinal movement of said upper section relative to said lower section.

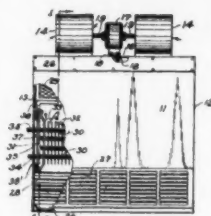
2,337,451. FREEZING TRAY. Ralph H. Chilton, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application May 28, 1937, Serial No. 145,261. 14 Claims. (Cl. 62-106.5).



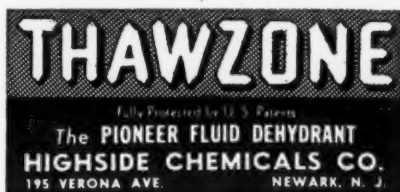
14. In a partitioning grid for a freezing tray, a mold element comprising an end-wall element formed of two relatively movable contiguous members and a plurality of side-wall members loosely supported on both of said contiguous members of the end-wall element, and a lever operatively connected with the side-wall members by means of one of the contiguous members to impart an ice-

dislodging movement to the side wall members.

2,337,518. UNIT FOR REHUMIDIFYING, FILTERING, COOLING, AND RECIRCULATING AIR. Fred M. Young and Soren K. Andersen, Racine, Wis.; said Andersen assignor to Young Radiator Co., Racine, Wis. Application Sept. 13, 1939, Serial No. 294,586. 1 Claim. (Cl. 62-129).



A device of the class described, comprising a vertically extending elongated cabinet being rectangular in cross section and having mounted on its top panel a transversely centrally positioned motor and blower fans on opposite sides thereof adapted to receive air from the room served and discharge it downwardly into the cabinet, an outlet grille in the bottom of the front panel of said cabinet, a core positioned in said cabinet and above said grille and being surrounded by a relatively narrow independent air passageway formed by a core enclosure extending a distance above and below the core, the core being supported directly thereby, said enclosure being secured to the walls of said cabinet by means of narrow brackets the lower bracket extending upwardly to thereby prevent the flow of moisture from said core enclosure to the cabinet walls.



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ELECTRIC BOTTLE COOLERS. Brand new, streamlined. No priority required. Immediate shipment. 4½ case capacity. Self-contained with ¼-hp. Universal Cooler Corporation unit ready to plug in. Equipped with interior shelving and can be used as an 8 cu. ft. food refrigerator. Price \$105. GENERAL REFRIGERATOR CO., 855 N. Broad St., Philadelphia, Pa.

100-FRIGIDAIRE Model "K" ½-hp. units, \$32.50; 100-Frigidaire Model A233E ½-hp. units, \$42.50. All units in running condition, with A.C. 60 cycle motors. F.O.B. New York. Write for our surplus list. 25¢ deposit must accompany all orders. EDISON COOLING CORP., Dept. R., 310 E. 149th St., New York 51, N. Y.

USED PRESSURE RECORDERS. Range 30 inches mercury vacuum to 30 lbs. per square inch. Recorders have 12" dials, 24 hour spring-wound clocks, wall mount aluminum-alloy cases. No priority required. Further information and prices upon request. AUTOMATIC PRODUCTS CO., 2450 N. 32nd St., Milwaukee 10, Wis.

FRANCHISES WANTED

A LARGE distributor of well-known and nationally advertised refrigerators and household and electrical appliances, in New York City and 75 mile radius, would like an additional line of high-grade merchandise to distribute—have a large and vigorous dealer organization and have territory well covered with competent travelers—amply financed. In reply give full particulars. Box 1506, Air Conditioning & Refrigeration News.

POSITIONS WANTED

ENGINEER: Air conditioning and commercial refrigeration. Ten (10) years' experience in sales and promotional work and installations. Capable of helping to develop new lines of equipment for future postwar. Age 40. College graduate, Christian, married. Will consider either sales or development work. Box 1508, Air Conditioning & Refrigeration News.

REBUILDING SERVICE

Condensing Units, Dehydrators, Filters and Float Valves.

Prices upon request.
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P. O. Box 572, Harrisonburg, Va.

Salesmen Can Collect Full Commissions In 1944 At 1943 Rates, Govt. Decides

(Concluded from Page 1, Column 2)
zation program on changes of basic hourly piecework or salary rates are equally applicable to changes in commission rates.

This action announced today does not involve any change in the policy on the salesmen's own sales. Although regulations were issued by the Commissioner on Sept. 4, 1943, designed in general to limit total commission earnings to those of the previous year, this regulation was subsequently suspended as to commissions on the salesman's own sales. That suspension harmonized the commission rule applied by the Commissioner with those of the National War Labor Board with respect to direct commissions.

The present action approved by the Economic Stabilization Director unifies the principles to be administered in 1944 not only for direct commissions, but as well for compensation based on a percentage of the sales of others, a percentage of profits and other like arrangements. With respect to these latter employment contracts, the Director's action taken pursuant to the Commissioner's recommendation modifies the restriction on increases in total earnings administered by the Commissioner of Internal Revenue during 1943.

In connection with the commission rule applied by the National War Labor Board, the Economic Stabiliza-

tion Director, in his letter to the Commissioner stated:

"I am satisfied the commission rule applied by the National War Labor Board is not in conflict with the basic principles of the stabilization program and further that it rests on sound considerations of administrative necessity.

"I shall not, on the basis of present information, direct any change in the principle applied by the National War Labor Board with respect to commission earnings. Accordingly, I am moved by your recommendation to conclude that the same principle

should apply for the calendar year 1944 to commission earnings and related methods of compensation subject to your jurisdiction. You are authorized and directed to take appropriate action to effectuate this policy."

Any further announcements on the subject will be made by the Commissioner and in due course regulations will issue from his office implementing the policy announced today, it was stated.

There is a question as to whether the rules announced by Judge Vinson would apply in the case where a salesman is paid both base salary and commissions, and the base salary, but not the commission rate, has been increased.

It is expected that this will be covered by some future Treasury announcement.

A. E. Anderson Manages N. J. Service Firm

DOVER, N. J. — A. E. Anderson, former appliance service manager of the New Jersey Power & Light Co., will manage Refrigeration Service of New Jersey, Inc., a service firm reorganized from the firm Refrigeration Service of North Jersey, Inc., which Carl H. Winnefeld established in 1935.

Mr. Winnefeld has disposed of his interest in the original firm, pending his induction in the U. S. Navy.

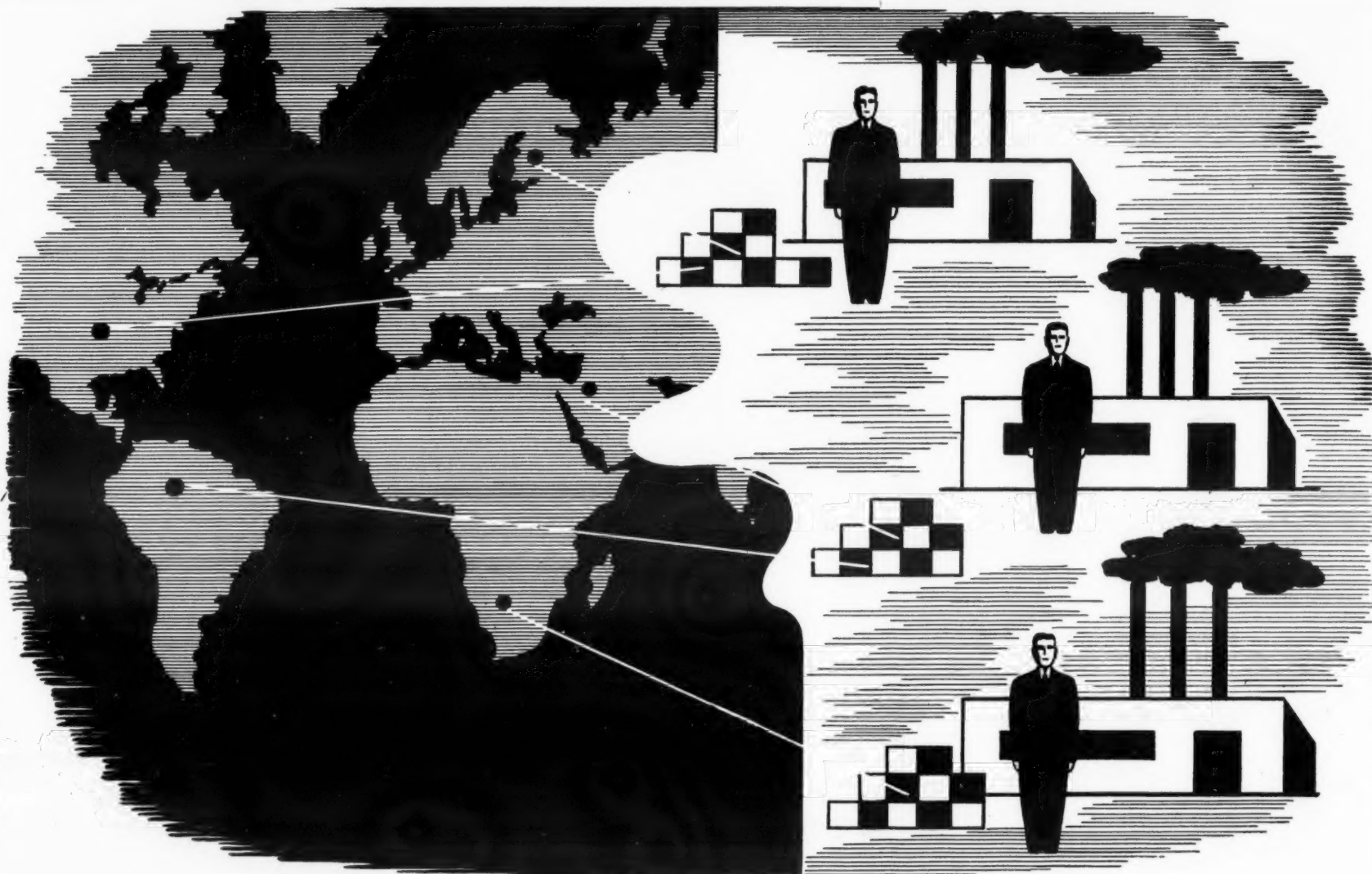
Ten service and installation men are employed by the firm, which handles appliance service and commercial refrigeration sales and service in five counties of northern New Jersey.

Yanks In England Want More Sodas

LONDON, England — Soda fountains, ice cream freezers, and drink dispensing machines are being shipped here for installation in post exchanges serving the many units of the United States Army stationed in the United Kingdom, according to the Army Exchange Service.

Accompanying the shipment are six civilians who will install the equipment and instruct soldiers and civilians in the art of "soda-jerking." A survey here is said to have revealed that many soldiers prefer "drug-store" drinks to beer.

Ice cream will be produced from a concentrated mix manufactured in the United States.



WORLD MARKETS

Yes, there'll be a world market for refrigeration when the dove of peace alights. All over the world, native peoples are learning from our armed forces. But of vastly more direct interest to us is the effect upon our own Army and Navy. Not "in the halls of Montezuma", but "on the shores of Tripoli" and at thousands of other points, our men out yonder are seeing refrigeration and air conditioning applied daily. They're being sold now, and tomorrow will be customers of yours . . . and ours.

As for us, we're producing for the government in every branch of the war effort. We're keeping up to the minute . . . experimenting . . . improv-

ing . . . developing new and better methods. All this will help us . . . and you . . . when the bugles blow victory. New techniques are being developed by our research men. They'll be at your service when you need them. "In time of war prepare for peace" is just as true as its opposite. We're preparing. How about you?

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If only 200,000 of the new homes built yearly are equipped with year-round air conditioning the volume will total \$200,000,000. There's a figure to ponder . . . and here's another. Out of the more than 500,000 retail stores and thousands of restaurants, hotels and institutions which will need frozen food storage cabinets after the war only about 25,000 now have them . . . what a market! . . . The Bush Manufacturing Company, Hartford, Connecticut . . . 415 Lexington Avenue, New York . . . 549 W. Washington Blvd., Chicago.

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